Hallucinations, Delusions, and Formal Thought Disorder in Dissociative Identity Disorder and Schizophrenia

A thesis submitted in partial fulfillment of the requirements for the Degree of Master of Science in Psychology

Rachael C.W. Palmer

University of Canterbury

2015

Acknowledgements

I wish to express my sincere gratitude to all those who have supported me throughout this thesis. Firstly to my primary supervisor, Associate Professor Martin Dorahy, thank you for all your wisdom, encouragement, and the countless hours you have put in to this thesis. Your down-to-earth, approachable, and encouraging nature made you an excellent supervisor whom I could always call on for advice.

Secondly thank you to my secondary supervisor, Professor Warwick Middleton. Your keenness to help made sourcing participants in Brisbane easy, and your wisdom in the formulating stages increased the quality of the study.

Thirdly, thank you to everyone who helped with the data collection. Thank you to Lenaire Seager for your help in Brisbane and for all the laughs during stressful times at the hospital. Thank you to Peter Bath, Lucy Gilmour, and Ellen Sole for your dedication in sourcing participants and assisting with the data collection in Christchurch.

Finally, thank you to all my family and friends who have supported me throughout this thesis. To Mum and Dad, who are always proud and positive, to my partner George who has celebrated with me in the highs and supported me in the lows, and to my friends for the unwavering encouragement and support. I cannot thank you all enough for the part you have all played in completing this thesis.

Abstract

Psychotic symptoms that are usually associated with schizophrenia but also experienced in dissociative identity disorder (DID) can bring about diagnostic difficulties. Furthermore, some psychotic symptoms have been associated with childhood abuse, but the combination of childhood and adulthood abuse, and their relationship with psychotic symptoms is relatively unexplored. The present study used a battery of quantitative measures for two investigations. Firstly, phenomenological similarities and differences in hallucinations, delusions, and formal thought disorder were compared in three groups of patients: 1) DID with childhood abuse (n = 29), 2) DID with childhood and adulthood abuse (n = 21), and 3) schizophrenia (n = 17). No psychotic symptom differences were found between the two DID groups, however a number of differences between one or both of the DID groups and the schizophrenia group were found. DID participants reported higher auditory hallucination distress, higher interpretations of loss of control related to auditory hallucinations, louder auditory hallucinations, and higher frequencies of other modalities of hallucinations compared to the schizophrenia group. Secondly, relationships between childhood and adulthood abuse and psychotic symptoms were examined. Childhood and adulthood abuse accounted for significant variance in other modalities of hallucinations (visual, tactile, olfactory, and gustatory). Childhood abuse accounted for significant variance in auditory hallucination attributions, delusion distress and conviction, and formal thought disorder. The results of this study may aid in diagnostic accuracy and access to appropriate treatments for people with both disorders, and may help screening for psychotic symptoms in people who have been abused in childhood.

Table of Contents

List of Tables

Hallucinations, Delusions, and Formal Thought Disorder in Dissociative Identity Disorder and Schizophrenia

Overview

Many similarities have been drawn between the positive symptoms reported by those with schizophrenia and the array of symptoms experienced in those with dissociative identity disorder (DID; e.g., Laddis & Dell, 2012; Ross et al., 1990). However, there have been suggestions dating back to Bleuler's (1911/1950) original description of schizophrenia that phenomenological differences in these symptoms exist between the two disorders (Dorahy et al., 2009). Understanding the differences in symptoms experienced between the two disorders may help in providing accurate diagnosis of DID, which is often mistakenly diagnosed as schizophrenia (Laddis & Dell, 2012). A greater understanding of the phenomenology of the symptoms may also provide direction for targeted treatment, which stands to benefit both groups.

Expanding on the work of Dorahy et al. (2009), this thesis aimed to explore and highlight the similarities and differences between symptoms experienced in DID (with different levels of abuse chronicity) and schizophrenia by comparing three groups: DID with childhood abuse, DID with childhood and adulthood abuse, and schizophrenia. These three groups were compared by exploring auditory hallucinations, other hallucination modalities (i.e., visual, tactile, olfactory, gustatory), delusions, and formal thought disorder.

Childhood abuse has been consistently linked to hallucinations, and the relationship is now considered causal (Read, van Os, Morrison, & Ross, 2005). While there is evidence of relationships between childhood abuse and delusions, and childhood abuse and formal thought disorder (e.g., Read, Agar, Argyle, & Aderhold, 2003), the research is lacking in volume. Furthermore, the relationship between childhood and adulthood abuse and psychotic symptoms

is relatively understudied. Through understanding the correlates of childhood and adulthood abuse, knowledge about the potential difficulties that could be faced by these individuals may be gained. This knowledge may be useful in screening for these symptoms, and could possibly aid individuals with abuse histories to gain access to early interventions. This thesis aimed to examine links between childhood and adulthood abuse and hallucinations, delusions, and formal thought disorder. Childhood and adulthood abuse data from DID and schizophrenia participants was used to explore these relationships.

This chapter begins with an outline of each disorder and its epidemiology. This is followed by a review of the literature on the known similarities and differences between DID and schizophrenia with respect to auditory hallucinations, other modalities of hallucinations, delusions, and formal thought disorder. Finally, the links between these symptoms and abuse history is explored.

Dissociative Identity Disorder

DID (previously known as multiple personality disorder) is a relatively under-studied mental illness, known for its tendency to occur in individuals who have experienced extreme trauma in childhood (Putnam, Guroff, Silberman, & Barban, 1986). The prevalence of childhood abuse and neglect in individuals with DID in the Western world is reported to be approximately 90% by the 5th edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association [APA], 2013). Similarly, a high prevalence of abuse and neglect is also found in dissociative disorders across inpatient and outpatient settings, at significantly higher rates than non-dissociative controls (Şar, 2011). In DID, this trauma usually consists of physical, sexual, and/or emotional abuse, which is often at the hands of a family member (Middleton & Butler, 1998).

DID is comprised of a complex combination of symptoms. While the diagnostic criteria primarily focuses on the dissociative identities and associated amnesia, individuals with DID experience a number of other symptoms including auditory and other types of hallucinations and dissociation (Dorahy et al., 2009). The DSM-5 diagnostic criteria for DID are: Two or more distinct personality states that disrupt identity by taking over control of psychobiological functioning, coupled with recurrent memory loss of everyday events. These symptoms cause distress or impairment in significant areas of functioning, and cannot be explained by cultural or religious behaviour, substance use, or another medical condition (APA, 2013). Regarding the prevalence of DID, one study reported it to be 0.4% in the general population (Akyüz, Doğan, Şar, Yargiç, & Tutkun, 1999), and another has found it to be 6% in the psychiatric outpatient population (Foote, Smolin, Kaplan, Legatt, & Lipschitz, 2006). Dissociative disorders have been reported at 18% in women in the general population. The rate of DID in that sample was 1.1% (Şar, Akyüz, & Doğan, 2007).

Although not included in the diagnostic criteria, there are a number of symptoms that commonly feature in individuals with DID that have been outlined in phenomenological studies (e.g., Dorahy et al., 2014). Middleton and Butler's (1998) study of 62 patients with DID found that almost all patients experienced at least one type of hallucination, and experienced severe dissociative symptoms, which included depersonalisation, derealisation, and amnesia. Furthermore, many of these patients had comorbid diagnoses including depression, schizophrenia, anorexia nervosa, bulimia nervosa, and somatisation disorder (Middleton & Butler, 1998). Therefore, due to this complex presentation, it is very difficult to generalise people with DID, as their symptoms and level of functioning vary widely.

There is a significant gender bias in those with DID in the clinical setting, with the number of females presenting for treatment far outweighing the number of males (APA, 2013). This has been linked to the idea that males who experience trauma are more likely to externalise the resulting negative emotions through violence (Bentovim, 2002). This may result in males with DID being more prevalent in correctional facilities than in mental health settings.

DID has long been associated with questions and controversy regarding the validity of the diagnosis. Comparison of study results is hampered by a number of common DID symptoms not being included in diagnostic manuals. A recent comprehensive review of the DID literature provides evidence of the content, criterion, and construct validity of the diagnosis. The authors demonstrated that DID is a valid diagnosis, which is distinctly separate from other disorders, with its own aetiological pathways, unique neurophysiological profile (demonstrated through neuro-imaging studies), and cognitive correlates (e.g., memory and information processing anomalies; Dorahy et al., 2014). Furthermore, Brand et al. (in press) have used published literature to dispel six common myths about DID, such as DID being iatrogenic and a ‘fad diagnosis’. The authors aimed to reduce the myths surrounding DID in order to improve assessment for dissociation and aid DID research, resulting in better outcomes for patients.

Schizophrenia

Schizophrenia is a mental illness characterised by both positive and negative symptoms. Based upon the DSM-5 criteria, positive symptoms include hallucinations, delusions, disorganised speech (sometimes referred to as formal thought disorder) and grossly disorganised or catatonic behaviour; while negative symptoms include blunted affect, alogia, anhedonia, asociality and avolition (APA, 2013). To be diagnosed with schizophrenia, at least two of the following five symptoms must be present: Hallucinations, delusions, disorganised speech,

grossly disorganised or catatonic behaviour, and/or negative symptoms. Additionally, the individual must have at least one of the first three listed symptoms, which must cause significant impairment in an area of life. These symptoms must persist for at least six months and are not better explained by substance use or another medical or psychological disorder (APA, 2013). Shivashankar et al. (2013) reported that the prevalence of schizophrenia in the general population is 0.36%, consistent with the DSM-5, which reports the lifetime prevalence of schizophrenia as approximately 0.3-0.7% of the population (APA, 2013). Schizophrenia is becoming increasingly associated with traumatic experiences in childhood, such as abuse (Read et al., 2005; Morgan & Fisher, 2007). A review of the evidence relating childhood abuse to schizophrenia (and psychosis) concluded that the relationship is causal (Read et al., 2005). The relationship between schizophrenia and childhood trauma is explored later in this chapter.

While symptoms of schizophrenia generally emerge between late-adolescence and the mid-thirties, they can also appear in childhood (APA, 2013). In this case, earlier symptom presentation (as in childhood) is related to a poorer prognosis, although this may be due to males generally presenting with symptoms earlier and having poorer outcomes (APA, 2013).

Phenomenological Similarities and Differences Between DID and Schizophrenia

There are a number of overlapping symptoms in DID and schizophrenia, which may lead to an incorrect diagnosis of the disorders. In particular, there is a strong overlap in some of the symptoms referred to as the positive symptoms of schizophrenia, particularly hallucinations. It has been demonstrated that individuals with DID score significantly higher in positive symptoms than do individuals with schizophrenia, using the Positive and Negative Symptom Scale (Kay, Flszbein, & Opfer, 1987). Conversely, individuals with schizophrenia score higher in negative symptoms than individuals with DID (Ellason & Ross, 1995).

A collection of positive symptoms initially grouped to describe common schizophrenia symptoms have also been found to commonly occur in individuals with DID. Schneider's First Rank symptoms of schizophrenia (also referred to as Schneiderian symptoms) are a collection of eight symptoms that Schneider (1959) thought to be particularly indicative of schizophrenia. Schneider's First Rank symptoms fall into the following categories: Auditory hallucinations, delusional perception, passive symptoms, thought broadcasting, thought withdrawal, and thought insertion (Saddichha, Kumar, Sur, & Sinha, 2010). Ross et al. (1990) compared the average number of First Rank Symptoms in individuals with DID and schizophrenia. They collected data from 102 individuals with DID in structured interviews and combined it with data from other published studies to get a sample of 368 individuals with DID. They used published studies to get data for 1,739 individuals with schizophrenia. On average, those with DID reported 4.9 First Rank Symptoms compared to 1.3 in those with schizophrenia (Ross et al., 1990). In later work, Ross and Joshi (1992) found a strong association between Schneiderian symptoms and childhood trauma in a study of more than 500 participants from the general population. This may indicate that these symptoms are better classified as post-traumatic rather than psychotic.

These overlapping symptoms served as a motivator for the present study to explore phenomenological differences in symptoms that occur in DID and schizophrenia, to aid correct diagnosis and to better inform treatment.

Auditory hallucinations

Auditory hallucinations are commonly experienced in both DID and schizophrenia, which may be one of the key similarities that can lead to misdiagnosis of DID as schizophrenia (Dorahy et al., 2009). Auditory hallucinations have been reported to occur in 90-98% of people

with DID (Dorahy et al., 2009; Middleton & Butler, 1998), and 33-88% of people with schizophrenia (Bauer et al., 2011). Interestingly, hallucinations of any type make up part of the DSM-5 diagnostic criteria for schizophrenia, yet are not mentioned in the diagnostic criteria for DID, despite evidence that hallucinations are more common in DID (e.g., Dorahy et al., 2009).

It is important to note that auditory hallucinations occur in many individuals who do not have any form of mental illness. Voice hearing in the absence of other symptoms is not indicative of a psychological disorder (Honig et al., 1998). In a study of 15,000 people from the general population, 4.6% experienced hallucinations with the most common modality being auditory hallucinations, yet only 33% of that subgroup met criteria for diagnosis of a psychiatric disorder (Tien, 1991). In Longden, Madill, and Waterman's (2012) review of voice hearing research, lifetime prevalence of voice hearing in healthy adolescents was found to range between 2% and 41% (most studies reported life time prevalence rates between 2% and 8%). The median number of adults who experienced auditory hallucinations was calculated to be 13.2% in a review of 17 studies (Beaven, Read, & Cartwright, 2011).

Three studies of note have compared auditory hallucinations in DID and schizophrenia. Dorahy et al. (2009) carried out a comparison study of auditory hallucinations in individuals with DID and schizophrenia. The study included 65 participants that belonged to one of three mutually exclusive groups: DID, schizophrenia with childhood maltreatment, and schizophrenia without childhood maltreatment. The Mental Health Research Institute Unusual Perceptions Schedule (Carter et al., 1995) was used to assess hallucinations, and the Childhood Trauma Questionnaire (Bernstein & Fink, 1998) was used to assess childhood maltreatment. With regard to auditory hallucinations, the DID participants were more likely to hear more than two different voices and to hear voices before the age of 18, as well as experiencing both adult and child

voices. Auditory hallucinations were more often louder than normal speech, related to an influential character in the person's life, and were experienced alongside other modalities of hallucinations. In both DID and schizophrenia, voice content was incongruent with mood, and voice location was most commonly internal (contrary to popular belief that people with schizophrenia primarily hear external voices). Dorahy et al. commented that voice hearing experiences were more pervasive in the DID group than the schizophrenia groups, regardless of maltreatment status. Laddis & Dell (2012) compared 40 participants with DID and 40 participants with schizophrenia using the Multidimensional Inventory of Dissociation (Dell, 2006), the Structured Clinical Interview for DSM-IV Axis I Disorders (First, Spitzer, Gibbon, & Williams, 1998), the Structured Clinical Interview for Dissociative Disorders – Revised (Steinberg, 1993), and the Trauma Experiences Questionnaire (Nijenhuis, Van der Hart, & Kruger, 2002). All participants were outpatients in active treatment. In comparing the two groups, those with DID routinely endorsed voice hearing, and reported a significantly higher frequency of voices commenting, voices arguing, command voices, angry voices, and child voices, than the schizophrenia group. Similar to Dorahy et al.'s study, Laddis and Dell's study supports the idea that auditory hallucinations are more common in DID than schizophrenia and appear to have some phenomenological differences in their presentation. Honig et al. (1998), compared the form and content of auditory hallucinations in non-patients (n = 15), patients with dissociative disorders (n = 15), and patients with schizophrenia (n = 18) using a semi-structured interview. No differences were found between the three groups in auditory hallucination form, such as the type of voice heard, and the location it was heard from. The content of auditory hallucinations differed between the three groups. The two patient groups (dissociative disorders and schizophrenia) more commonly experienced voices being neutral or negative in content,

were more afraid of voices, reported that voices controlled them and disturbed their daily life, and that they got into problems due to the voices. Unlike Dorahy et al. and Laddis and Dell, no significant differences were found in content of auditory hallucinations between the dissociative disorders group and the schizophrenia group. This may have been due to Honig et al. using a group of patients with dissociative disorders, rather than using patients with DID. DID has been reported to be the most severe of the dissociative disorders (Spiegel, 1984). Honig et al.'s dissociative disorder and schizophrenia groups may have been closer in severity of symptoms than DID and schizophrenia groups employed in other studies, resulting in no significant group differences.

McCarthy-Jones et al.'s (2004) study of 199 patients described the phenomenology of auditory hallucinations in a psychiatric sample made up of mostly patients with schizophrenia. Their sample reported an average of 4.3 different voices, with near-equal numbers hearing internal voices, external voices, or both. The voices commonly lasted for hours at a time, which were mostly at a normal conversational volume. Voices had a predominantly negative tone. Participants mainly heard adult voices, and 63% heard either anonymous or a mixture of anonymous and non-anonymous voices. These results show some similarities and differences to Dorahy et al.'s (2009) schizophrenia samples. The number of voices heard is more consistent with their DID sample, most of whom heard more than two voices, whereas fewer than half of the schizophrenia groups heard more than two voices. The location of the voices in Dorahy et al.'s schizophrenia samples was most commonly inside the head. Both studies were similar in that the voices were predominantly adult voices in schizophrenia samples, but Dorahy et al.'s participants tended to hear voices louder than normal speech. These studies highlight the difficulty in differentiating voice hearing experiences. Auditory hallucinations are common to

both DID and schizophrenia, and are phenomenologically similar in some ways in both patient groups.

A number of studies have used the Psychotic Symptoms Rating Scale (PSYRATS; Haddock, McCarron, Tarrier, & Faragher, 1999) to evaluate or compare characteristics of auditory hallucinations in a number of disorders. The PSYRATS was used in the present study to compare auditory hallucinations in the three groups. A study by Steel, Haddock, Tarrier, Picken, and Barrowclough (2011) examining 50 participants compared auditory hallucinations in individuals with schizophrenia and substance abuse, with or without comorbid posttraumatic stress disorder (PTSD). Between the two groups, the only difference found was that the amount and intensity of distress was higher in the group with comorbid PTSD. No significant differences were found in frequency, duration, loudness, disruption to life, or controllability of voices (Steel et al., 2011). It may be that exposure to trauma contributes to more distressing hallucinations; groups with more severe trauma exposure may report more distress associated with voice hearing. Wearne and Genetti (2015) used the PSYRATS to compare auditory hallucinations in schizophrenia (n = 16) to pseudohallucinations in PTSD (n = 20). Pseudohallucinations are thought to differ from hallucinations as they lack sensory realness, and have been posited to be a less severe experience on a continuum view of hallucination experiences. The aim of Wearne and Genetti's study was to look at phenomenological differences and similarities between these experiences. No significant differences were found between the two groups on auditory hallucination frequency, duration, loudness, control, or position. This supports the idea that dividing voice hearing into hallucinations and pseudohallucinations may be artificial and inaccurate. In a review paper, McCarthy-Jones and Longden (2015) also supported the idea that hallucinatory experiences in PTSD and schizophrenia are phenomenologically similar in terms of

their content and form. The voice hearing experience is thought to be more prevalent in DID than PTSD, with DID patients experiencing a greater number of voices than PTSD patients (Dorahy & Palmer, 2015). Consequently, it was thought that DID participants in the present study may show some differences to the schizophrenia sample on some phenomenological markers.

Woodward et al. (2014) recently broke down the auditory hallucinations scale of the PSYRATS into four areas that they posit reflect the psychological constructs that make up the scale: Frequency, distress, attributions, and loudness. The frequency construct includes the frequency, duration and level of disruption of auditory hallucinations. The distress construct includes the amount of negative content, the severity of distress, and the level of control the individual feels they have about starting and stopping the voices. The attributions construct includes the location (inside or outside the head) and origin (beliefs about internal or external sources) of the voices, with location outside of the head and external origin considered to represent more pathological attributions. Finally, loudness is made up of one item, relating the loudness of the voices to the loudness of the individual's own voice. Higher scores on each construct reflect greater severity. These constructs were used in the present study to identify phenomenological similarities and differences in auditory hallucinations in those with DID and schizophrenia. Information on the psychometric properties of these constructs is discussed in the Method chapter of this thesis.

As reviewed in this section, there is considerable research outlining auditory hallucinations in both DID and schizophrenia, and three well-designed comparisons of auditory hallucinations in DID and schizophrenia. The present study aimed to add to this research by further comparing features of hallucinations: Frequency, distress, attributions, and loudness.

Interpretation of voices

Interpretations of voice hearing are not diagnostic, however, they may help to differentiate auditory hallucination experiences between disorders. Morrison, Nothard, Bowe, and Wells (2004) investigated differences in the beliefs people held about auditory hallucinations, specifically positive and negative interpretations of voices. The Interpretation of Voices Inventory (IVI; Morrison, Wells, & Nothard, 2002) was used to assess these beliefs, and is used in the present study for the same purpose. Morrison et al. (2004) compared 41 voice hearers with diagnoses of schizophrenia, schizoaffective disorder, or schizophreniform disorder to 39 non-patients who scored highly (above 30) on the Launay–Slade Hallucinations Scale (Launay & Slade, 1981). The non-patient group was considered to have a high predisposition to voice hearing. The IVI items are worded hypothetically (e.g., "If I were to hear voices, I would probably think that…"), which allows for its use on individuals who have not had voice hearing experiences. Compared to non-patients, voice hearers had significantly more negative interpretations of voices; specifically, more interpretations of loss of control (e.g., "They will make me go crazy", and "They will take over my mind") and more metaphysical interpretations of voices, which are usually negative in content (e.g., "They mean I am possessed", and "They mean I am a bad person"). No differences were found in the number of positive interpretations of voices between the voice hearers and non-patients. Negative interpretations of voices may be associated with the distress experienced in relation to voice hearing (Morrison et al., 2004), and may contribute to the transition from non-pathological voice hearing to voice hearing being problematic or distressing (Morrison, Wells, & Nothard, 2000; Longden et al., 2012). Negative experiences including negative content, higher frequency, longer duration, and emotional valence tend to occur more in those with pathological voice hearing compared to those who are

considered ‘healthy’, according to a review by de Leede-Smith and Barkus (2013). Positive interpretations of voices are thought to serve as a coping mechanism to help cope with memories of trauma, and may mean that the individual experiences some comfort from their voice hearing experiences (Romme & Escher, 1989; Miller, O’Connor, & DiPasquale, 1993).

Woodward et al. (2014) suggest that attributions may be a useful construct to work with in therapy, as more pathological attributions (e.g., beliefs that voices originate from external sources and sound like they are coming from outside the head) may be related to the voice hearer attaching a more personal meaning to the voice. Understanding the attributions of auditory hallucinations is important to the Hearing Voices Movement (see Escher & Romme, 2012), which moves away from pathologising voice hearing and towards understanding the individual’s voice hearing as a meaningful experience (Corstens, Longden, McCarthy-Jones, Waddingham, & Thomas, 2014). Reframing these attributions is a focus in the Hearing Voices Movement and if successful can reduce the level of distress related to voice hearing (Woodward et al., 2014).

The present study aimed to compare individuals with DID and schizophrenia on their interpretations of voices in order to examine whether phenomenological differences exist in this aspect of the voice hearing experience.

Other hallucinations

Auditory hallucinations are the most extensively researched modality of hallucination, especially in relation to DID. There is a limited amount of literature pertaining to other modalities of hallucinations (i.e., visual, tactile, olfactory, and gustatory). In Dorahy et al.’s (2009) study comparing DID and schizophrenia with and without childhood maltreatment, incremental increases between the three groups were found in the prevalence of gustatory and

olfactory hallucinations. The schizophrenia without childhood maltreatment group had the lowest incidence, followed by schizophrenia with childhood maltreatment, and the DID group reported the highest incidence. A higher percentage of DID participants reported experiencing visual (83%), tactile (90%), olfactory (76%), and gustatory (55%) hallucinations than the two schizophrenia groups (visual: 44%, tactile: 19-33%, olfactory: 22-38%, gustatory: 6-25%). In Middleton and Butler's (1998) study of 62 patients with DID, all types of hallucinations were commonly experienced: Auditory hallucinations (98%), visual hallucinations (74%), somatic hallucinations (82%), olfactory hallucinations (64%), and gustatory hallucinations (52%).

In schizophrenia, the most common modality of hallucinations that are experienced is auditory hallucinations (Bauer et al., 2011). However visual, tactile, olfactory, and gustatory hallucinations are also experienced in some individuals with schizophrenia. In a paediatric study using participants with childhood-onset schizophrenia, there was a high rate of hallucinations. Of the 111 in the sample, 94.9% experienced auditory hallucinations, 80.3% experienced visual hallucinations, 60.7% experienced tactile hallucinations, and 29.9% experienced olfactory hallucinations (David et al., 2011). Olfactory hallucinations have been associated with late-onset schizophrenia, and appear to be more commonly experienced in females than males (Pearlson et al., 1989). Stevenson, Langdon, and McGuire (2011) calculated from a number of studies and found that the average rate of people with schizophrenia experiencing olfactory hallucinations was 13.7%. Despite the common misconception that schizophrenia is largely characterised by auditory hallucinations, this is not the case as the aforementioned studies have shown that various other types of hallucinations are relatively common among this population.

Although these modalities of hallucinations are less frequently studied, they may be relatively common in people with DID, and there is some evidence that they are more prevalent

in individuals with DID than in individuals with schizophrenia (e.g., Dorahy et al., 2009). The present study aimed to add to the existing research by comparing the frequency of these types of hallucinations between DID and schizophrenia.

Delusions

Delusions are one of the core positive symptoms of schizophrenia. Although not necessary for a diagnosis of schizophrenia, delusions are often present in those with the disorder (Tandon, Bruijnzeel, & Rankupalli, 2013). People with schizophrenia can have a wide variety of delusions including persecutory, referential, somatic, religious, and grandiose (APA, 2013). Although common in schizophrenia, delusions are rarely reported in DID (e.g., Laddis & Dell, 2012). In schizophrenia, it appears that delusions may be present in order to explain unusual experiences, such as hearing voices (Moskowitz, 2012). With this function, it appears experiences of delusions or beliefs may be different in psychotic disorders than in trauma-related disorders such as DID. A study of veterans with PTSD found that although endorsement of psychotic symptoms (e.g., delusions and hallucinations) were relatively common in their sample (20 of the 30 participants), none of them believed the experiences to be ‘real’ (Lindley, Carlson, & Hill, 2014). Similar results may be found in the present study when comparing conviction of delusions in DID and schizophrenia.

In a comparison between schizophrenia and DID, Laddis and Dell (2012) reported that patients with schizophrenia scored significantly higher on delusions in comparison to those with DID when using the Psychosis Screen of the Multidimensional Inventory of Dissociation (Dell, 2006). Delusions in individuals with psychosis or schizophrenia are associated with higher levels

of distress, preoccupation, and conviction than similar beliefs held by members of the general public (Peters, Joseph, & Garety, 1999).

Despite delusions seeming to be uncommon in DID, they may be a useful symptom to measure to facilitate discrimination between DID and schizophrenia. The present study aimed to add to the literature by comparing delusions and associated distress, preoccupation, and conviction in DID and schizophrenia.

Formal thought disorder

Formal thought disorder (or disorganised thinking observable through disorganised speech) is one of the positive symptoms of schizophrenia included in the DSM-5 (APA, 2013). As with hallucinations and delusions, a person does not need to have formal thought disorder for a diagnosis of schizophrenia, despite it being a common symptom. Harrow and Marengo's (1986) study of 191 participants compared psychiatric hospital inpatients with schizophrenia (n = 44), psychosis (n = 67), and non-psychotic disorders (n = 80). Participants were assessed in their acute hospitalisation phase, and followed-up two and four years after their discharge. Forty five percent of the inpatients with schizophrenia had moderate to severe formal thought disorder in the acute phase, which was similar to the rates in the patients with psychosis (46%), but higher than the non-psychotic patients (32%). At follow up, those with schizophrenia had higher rates of persistent formal thought disorder (39%; present at both two and four years post-discharge) compared to the psychotic (25%) and non-psychotic (13%) patients. Patients with schizophrenia also had higher rates of episodic formal thought disorder (24%; present at four years post-discharge but not present at two years post-discharge) compared to the psychotic (14%) and non-psychotic (11%) patients (Harrow & Marengo, 1986).

Formal thought disorder is thought not to occur routinely in dissociative disorders such as DID. In some patients with dissociative disorders, the process of switching between alters or experiencing dissociative amnesia can mimic some features of formal thought disorder, such as blocking, thought withdrawal, and word salad (Şar & Öztürk, 2008). At the time of writing, the present study was the first known to compare frequency of formal thought disorder symptoms in DID and schizophrenia.

Relationships Between Psychotic Symptoms and Abuse History

Pierre Janet (1907) first suggested that trauma plays a role in the development of dissociative disorders. Since then, it has become widely accepted that trauma is a major contributor to the development of dissociative disorders, in particular DID. It is well documented that people with DID almost always have a history of childhood trauma, which is often characterised by physical and/or sexual abuse, and/or neglect, that may be associated with the development of the disorder (e.g., Middleton & Butler, 1998; Putnam et al., 1986; Ross, Norton, & Wozney, 1989). Consistent with this idea, physical and/or sexual childhood abuse in individuals with DID has been reported at very high rates between 87% and 96% in a number of studies (Coons, Bowman, & Milstein, 1988; Middleton & Butler, 1998; Putnam et al., 1986; Ross, 1997, 2004; Ross et al., 1990; Ross et al., 1989; Schultz, Braun, & Kluft, 1989). Studies have also shown that childhood abuse or trauma is prevalent in individuals with schizophrenia. A cross-sectional study of participants with schizophrenia, bipolar disorder, and schizoaffective disorder found that 46% of those with schizophrenia had experienced childhood abuse (physical, sexual, or psychological). Comparable rates were found in schizoaffective disorder (40%) and bipolar disorder (50%). Females in the study were more likely to have experienced childhood abuse (of all types), psychological abuse, sexual abuse, and to have witnessed domestic violence.

Males were more likely to have experienced physical abuse in comparison to females (Álvarez et al., 2011). Friedman and Harrison's (1984) study of 20 female inpatients with schizophrenia found that 60% (n = 12) had suffered childhood sexual abuse, compared with 13.3% of the 15 control participants. It was also found that 50% of the schizophrenia sample were molested as an adult, five of them were molested once, and five more than once. Honig et al. (1998) found that 83% of participants with schizophrenia had experienced sexual abuse, physical abuse, or emotional neglect in their lifetime. A large review of 46 studies reported the prevalence of childhood abuse (sexual, physical, or both) as 69% in female inpatients and outpatients, mostly with psychosis. The same review reported the rate as 59% in males (from 31 studies). This review outlined the causal relationship between childhood abuse and schizophrenia and psychosis, and the dose effect between more severe abuse and stronger relationship with psychosis and schizophrenia (see Read et al., 2005).

Childhood abuse has been consistently linked with psychiatric problems later in life. In psychiatric inpatients, histories of childhood sexual abuse and childhood physical abuse are much higher than in the general population (Read et al., 2003). Childhood trauma is associated with a number of negative outcomes in later life including suicidality in adults (Read, Agar, Barker-Collo, Davies, & Moskowitz, 2001), which is also a common feature of dissociative disorders (Foote, Smolin, Neft, & Lipschitz, 2008). Additionally, within the psychiatric population, childhood trauma has been associated with self-harm, revictimisation, and substance use (Gladstone et al., 2004; Hien, Cohen, & Campbell, 2005). This has been seen in a New Zealand study examining the severity of mental health disturbance in 100 consecutive admissions to an inpatient unit in a general hospital. High risk of suicidality was related to physical and/or sexual childhood abuse history in both men and women. Duration of

hospitalization was significantly longer in patients who had been physically abused, and more specifically in men who had been physically abused, and women who had been sexually abused, compared to those without an abuse history. Women who had been sexually abused were significantly younger at their first psychiatric admission compared to those without a childhood abuse history (Read, 1998). Revictimisation in people who have abuse histories is sometimes seen in the form violence in relationships (Webermann, Brand, & Chasson, 2014). High rates of intimate partner violence were found in a study of 275 DID and dissociative disorder not otherwise specified outpatients, 29.6% of whom had experienced physical intimate partner violence, and 58.7% had experienced emotional intimate partner violence in the preceding six month period (Webermann et al., 2014).

The following sections explore the links between childhood abuse and psychosis. In particular, childhood abuse and hallucinations, delusions, and formal thought disorder are examined, as well as the correlates associated with experiencing multiple types of abuse.

Childhood abuse and psychosis

There is a strong link between a history of childhood abuse and psychotic symptoms (Read & Argyle, 1999; Muenzenmaier, Meyer, Struening, & Ferber, 1993; Reiff, Castille, Muenzenmaier, & Link, 2012; Varese et al., 2012). Many studies show a high rate of physical and/or sexual abuse in childhood in those who experience psychotic symptoms. In a review of 20 studies, it was found that at least 50% of both males and females with a psychotic disorder had experienced some form of childhood physical and/or sexual abuse (Morgan & Fisher, 2007). Individuals who experience psychosis and have a history of childhood abuse are likely to experience more severe psychotic symptoms than those without a history of childhood abuse,

and their symptoms are also described as more treatment refractory (Gearon, Bellack, & Tenhula, 2004; Muenzenmaier et al., 1993; Reiff et al., 2012). In a New Zealand study of psychiatric inpatients, 77% of those reporting either physical or sexual abuse in childhood had at least one symptom of schizophrenia as listed in the DSM-IV: 50% experienced hallucinations, 45% experienced delusions, and 27% experienced formal thought disorder (Read & Argyle, 1999). A causal link between childhood trauma and psychotic symptoms has been suggested by a number of studies (Janssen et al., 2004; Read et al., 2005; Whitfield, Dube, Felitti, & Anda, 2005). A traumagenic neurodevelopmental model of psychosis has been outlined, explaining the role of the hypothalamic pituitary adrenal axis, hippocampus, and frontal lobes in the development of psychotic experiences in those traumatised in childhood (Read, Perry, Moskowitz, & Connolly, 2001; Read, Fosse, Moskowitz, & Perry, 2014). The traumagenic model uses a biopsychosocial framework to explain the mechanism through which experiences of childhood trauma lead to psychotic symptoms.

Individuals who have experienced incestuous abuse in childhood (common in DID; Middleton & Butler, 1998), may present with a more severe pattern of psychotic symptoms. In Read et al.'s (2003) comparison in a community mental health setting, a sub-group who had experienced childhood sexual abuse were examined, of which 25 had experienced incestuous childhood abuse. Their symptom histories were compared to six who had experienced non-incestuous childhood sexual abuse. In comparison to those who experienced non-incestuous childhood sexual abuse, those who experienced incestuous abuse as a child reported a significantly greater number of DSM-IV symptoms of schizophrenia (Read et al., 2003). Further comparisons between these two sub-groups are discussed in the upcoming sections pertaining to the specific symptoms.

A dose-response relationship between the number of traumatic events in childhood and psychotic symptoms has been found in a number of studies (e.g., Longden, Sampson, & Read, 2015; Janssen et al., 2004; Lataster et al., 2006), suggesting poorer outcomes for those who suffered a higher degree or greater number of traumatic events as a child. Shevlin, Houston, Dorahy, and Adamson (2008) used data from the National Comorbidity Survey (n = 5,872) and the British Psychiatric Morbidity Survey (n = 8,580) to demonstrate a dose-response relationship between cumulative trauma and psychotic symptoms. These surveys reflect large, representative samples of the general population. Shevlin et al. (2008) found that an increase in the likelihood of experiencing psychosis was paired with an increase in the number of traumatic experiences. The study also found that experiencing two or more types of trauma was a significant predictor of psychosis in later life, which emphasises the significance of experiencing multiple traumatic events; this may often be the case in people with DID. It was also found that molestation and physical abuse were significant predictors of psychosis in later life, as well as violence in the home (Shevlin et al., 2008). This is particularly pertinent to DID and schizophrenia due to the very high rates of recurrent sexual and physical abuse that many individuals with such disorders have experienced (Read et al., 2005). Ross et al. (1994) found that patients with schizophrenia and a childhood abuse history had significantly more positive symptoms, and fewer negative symptoms than patients with schizophrenia who did not have a history of childhood physical or sexual abuse. They suggested that positive symptoms might occur through two pathways: An endogenous drive, or experiences of childhood psychosocial trauma.

Links between childhood abuse history and Schneiderian symptoms have been found in some studies. In a study of the general population, Ross and Joshi (1992) found that individuals who experienced childhood physical or sexual abuse were more likely to experience

Schneiderian symptoms in adulthood. Forty six percent of participants who were physically or sexually abused in childhood experienced three or more Schneiderian symptoms, compared to only 8% of those who had not been abused in childhood. Ross et al.'s (1994) study of patients with schizophrenia found that those with a history of childhood physical abuse or childhood sexual abuse experienced significantly more Schneiderian symptoms than those without childhood physical or sexual abuse histories. On average, those with abuse histories reported 6.3 Schneiderian Symptoms compared to 3.3 in those without an abuse history. A relationship was found between childhood abuse (physical and sexual) and six Schneiderian symptoms. The strongest of these relationships was between childhood abuse and voices commenting, and childhood abuse and visual hallucinations (Ross et al., 1994). Although these studies utilised 'psychotic participants' in a broad sense, these may be relevant to those with DID due to the common occurrence of such symptomology.

Childhood abuse and hallucinations

The relationship between childhood abuse and hallucinations (especially auditory hallucinations) has been studied extensively. Read et al. (2005) concluded that there is sufficient evidence from large, high quality studies that auditory hallucinations, specifically voices commenting and command hallucinations, are causally related to childhood abuse. Further weight was added to this conclusion in the following years with the publication of a number of large scale studies (Larkin & Read, 2008). One of these studies used a sample of 5,877 from the National Comorbidity Survey to explore relationships between childhood abuse, neglect and hallucinations (Shevlin, Dorahy, & Adamson, 2007). A number of links between childhood abuse and neglect and different types of hallucinations were found. Childhood sexual abuse was

related to a higher likelihood of visual, auditory, and tactile hallucinations. Childhood physical abuse was related to a higher likelihood of tactile hallucinations, and childhood neglect related to a higher likelihood of visual hallucinations. This suggests that childhood sexual abuse may be the most potent abuse type in regards to the development of hallucinations (Shevlin et al., 2007).

In a New Zealand inpatient study, Read and Argyle (1999) found that females who had experienced incestuous abuse were more likely to experience hallucinations than those who had experienced sexual abuse from someone outside of their family. In this study, 100 consecutive admissions to an acute psychiatric inpatient unit were examined. Twenty-two of these patients had a history of physical or sexual abuse, 10 of which were victims of incestuous abuse. All 10 patients with incestuous abuse histories experienced hallucinations. This is congruent with the high prevalence of hallucinations in individuals with DID, given that many suffer sexual abuse at the hands of a family member (Middleton & Butler, 1998). Read and Argyle also found similar rates of hallucinations in participants who had experienced childhood physical abuse (53%) and childhood sexual abuse (58%). However, the rate was higher in the participants with a history of both childhood physical abuse and childhood sexual abuse (71%).

Content of hallucinations and delusions may thematically represent past traumatic experiences in some cases. This notion has been supported in research by Reiff et al. (2012), in which qualitative similarities were found between abuse experiences and hallucinations and delusions in two thirds of the 22 participants who had been abused. Two participants in particular had hallucination content directly related to their histories of childhood sexual abuse. Others in the study had content that was not as directly associated, however their abuse history and hallucination and delusion content shared common themes. It was also found that participants with a childhood abuse history scored higher on trauma-relevant content in hallucinations and

delusions than psychotic patients without childhood abuse history. Hardy et al. (2005) studied 75 participants with psychosis who reported at least one symptom on the Scale of Assessment of Positive Symptoms (Andreasen, 1984). It was more common that the theme of hallucinations (e.g., guilt or humiliation) was related to past traumatic events (45%) than the actual content of the traumatic event (12.5%). In a study of 26 participants with psychotic disorders, the Beliefs About Voices Questionnaire (Chadwick & Birchwood, 1995) was used to assess participant's interpretation of their auditory hallucinations. Those with a childhood abuse history (38.5%) were more likely to hear more malevolent voices than those who did not have a childhood abuse history (Offen, Waller, & Thomas, 2003). These studies highlight the link found between abuse and the content of symptoms experienced.

There is an increasing body of research emerging that is working to explain the mechanism of the relationship between childhood trauma and the development of auditory hallucinations (Dorahy & Palmer, 2015). Dissociation, specifically depersonalisation, may mediate this relationship. Most studies in this area have found a significant positive relationship between voice hearing and dissociative experiences, and a meta-analysis calculated this to be r = .52 from 18 clinical and non-clinical studies (Pilton, Varese, Berry, & Bucci, 2015). Dissociation has been demonstrated to mediate the relationship between trauma and voice hearing (Anketell et al., 2010), while dissociation and self-concept clarity has been found to mediate trauma and psychosis (Sellwood, Evans, Reid, Preston, & Palmier-Claus, 2012). Absorption and depersonalisation have been found to predict hallucination proneness (Perona-Garcelán et al., 2013). The aforementioned studies demonstrate the importance of considering dissociative phenomena as key mediating factors in the relationship between childhood abuse and psychotic experiences.

The present study aimed to add to the extensive body of literature on childhood abuse and hallucinations. It explored relationships between the combination of both childhood and adulthood abuse and hallucinations. Additionally, this study looked for relationships between abuse and different features of auditory hallucinations (frequency, distress, attributions), and different types of hallucinations (auditory, visual, olfactory, gustatory, tactile).

Childhood abuse and delusions

Research thus far has provided mixed evidence as to whether a link between childhood abuse and delusions exist. Some studies exploring the link between childhood sexual abuse and delusions have failed to find a relationship (e.g., Sansonnet-Hayden, Haley, Marriage, & Fine, 1987; Hammersley et al., 2003), whereas others found specific relationships between the two, such as a case study that linked childhood sexual abuse to somatic delusions (Oruč & Bell, 1995). A number of delusion types were found in a group of participants who had experienced incestuous childhood abuse. Sixteen percent experienced thought insertion, 20% experienced ideas of reference, and 36% experienced paranoid delusions. However, none of the sample who had non-incestuous childhood abuse histories experienced any of these symptoms (Read et al., 2003). A study of women in long-term hospitalisation for psychosis (Beck & Van der Kolk, 1987) found a relationship between incest and sexual delusions, however not in those who experienced non-incestuous sexual abuse. A relationship between childhood sexual or physical abuse and paranoid ideation was found in female inpatients (Bryer, Nelson, Miller, & Krol, 1987). These specific relationships found between childhood abuse and incest lead Morrison, Frame, and Larkin (2003) to suggest that a causal relationship may be present as a result of the congruent nature of the traumatic experience and the delusional symptoms.

The present study aimed to further investigate the relationship between childhood and adulthood abuse and delusions, especially regarding the links between childhood and adulthood abuse, and distress, preoccupation, and conviction related to delusions.

Childhood abuse and formal thought disorder

There has been minimal research into the link between childhood abuse and formal thought disorder, with the research to date providing mixed results. Goff, Brotman, Kindlon, Waites, and Amico (1991) used a sample of 61 patients with psychosis, and found no difference in formal thought disorder, regardless of whether the participant had experienced abuse in childhood or not. However, a study of 100 consecutive admissions to an acute psychiatric unit found that delusions and formal thought disorder were equally prevalent in patients who had been sexually abused in childhood (35% prevalence for delusions and formal thought disorder; Read & Argyle, 1999). A discrepancy in this prevalence occurred in participants with a history of childhood physical abuse, with 50% experiencing delusions and 17% having formal thought disorder (Read & Argyle, 1999). Read et al. (2003) found that adulthood sexual assault history was associated with formal thought disorder, however formal thought disorder was not more prevalent in participants who had a childhood abuse history than participants with no documented childhood abuse. The combination of childhood and adulthood abuse was however predictive of formal thought disorder. Research on the relationship between abuse and formal thought disorder is lacking in volume, which served as a motivator for the present study to further explore this area.

Multiple types of abuse

Experiencing multiple types of abuse has been linked to a greater likelihood of experiencing psychotic symptoms. This is highlighted with the combination of types of abuse in childhood (physical and sexual), or the combination of childhood and adulthood sexual abuse as found in a study by Read et al. (2003). Their study included 200 participants in a community mental health setting, 92 of whom had files documenting sexual or physical abuse histories. In comparing these with the 108 without abuse histories, a number of significant relationships were found. A significant positive correlation (r =.20) was found between the number of types of abuse experienced (childhood sexual, childhood physical, adulthood sexual, and adulthood physical) and the number of schizophrenia symptoms experienced. Additionally, a significant positive correlation (r = .25) was found between the number of types of abuse experienced and the number of positive schizophrenia symptoms experienced (hallucinations, delusions, and formal thought disorder; Read et al., 2003). Their findings indicated that the prevalence of the three most common schizophrenia symptoms (hallucinations, delusions, and formal thought disorder) appear to rise incrementally as the number of types of abuse increase. It was also found that 34% (n = 64) of those with one type of abuse, 55% (n = 20) of those who had experienced two types of abuse and 100% (n = 8) of those who had experienced 3 types of abuse suffered from at least one of the three symptoms (Read et al., 2003). Hallucinations were most prevalent in those who had experienced both types of abuse in childhood (physical and sexual; 71%) and those who had sexual abuse in childhood and adulthood (86%). Auditory hallucinations were more prevalent in childhood sexual abuse, childhood physical abuse, and adult sexual assault than in those with no abuse history. Voices commenting, command hallucinations (to kill or harm one's self), and visual hallucinations were all related to the four types of abuse. Olfactory

hallucinations were related to childhood sexual abuse and both childhood physical and sexual abuse, but not adulthood assault. Lastly, tactile hallucinations were related to childhood abuse (physical or sexual), and a weak relationship was found between tactile hallucinations and adulthood abuse (physical or sexual). In those with incestuous childhood abuse histories, both olfactory hallucinations and tactile hallucinations were experienced by 16% of these participants. The combination of multiple types of abuse and abuse at different life stages appears to be related to poorer outcomes in terms of the prevalence of psychotic symptoms and the number of different psychotic symptoms that are experienced. The present study aimed to add to the literature on the combination of childhood and adulthood abuse and psychotic symptoms.

The Present Study

The present study consisted of two main investigations. Firstly, the comparison of symptoms between schizophrenia and 1) DID with childhood abuse only, and 2) DID with childhood and adulthood abuse. Secondly, an exploration for evidence linking childhood and adulthood abuse to psychotic symptoms.

The first part of the present study was driven by the number of similarities in symptoms between DID and schizophrenia, especially auditory hallucinations, resulting in cases where DID is misdiagnosed as schizophrenia (Laddis & Dell, 2012). This common misdiagnosis served as a motivator for the present study to follow on from the work of Dorahy et al. (2009), and to further examine auditory hallucinations in schizophrenia and DID in an attempt to highlight the similarities and differences in these experiences. Additionally, the study examined similarities and differences in other symptoms that are experienced in DID and/or schizophrenia, including other modalities of hallucinations (visual, tactile, olfactory, and gustatory), delusions, and formal thought disorder. No previous studies have compared DID groups in terms of abuse chronicity.

To further the knowledge in this area, the present study compared DID participants with different levels of chronicity of abuse (abuse ending in childhood versus childhood abuse continuing into adulthood) in order to understand how the chronicity of abuse related to the nature and severity of hallucinations, delusions, and formal thought disorder.

The second part of the present study aimed to strengthen the empirical exploration of the relationships between childhood abuse and hallucinations, delusions and formal thought disorder. Although some of these relationships are well-established (e.g., the link between childhood abuse and auditory hallucinations), others are either less-researched or have had mixed findings. Additionally, there is a lack of research that investigates the relationship between psychotic symptoms and the combination of childhood and adulthood abuse. Due to this, the second part of the present study aimed to add to the current knowledge by demonstrating links between childhood and adulthood abuse, and hallucinations, delusions, and formal thought disorder.

Hypotheses

This study aimed to explore a number of hypotheses, being guided where possible by the findings from previous research.

Hypothesis One: There would be incremental increases in auditory hallucinations based on increases in abuse exposure in the three groups, measured in levels of distress, frequency, attributions and loudness. The schizophrenia group was predicted to have the lowest levels, followed by the DID with childhood abuse group, and the DID with childhood and adulthood abuse with the highest levels. This hypothesis was based on the findings of Dorahy et al. (2009) and Laddis and Dell (2012). Dorahy et al. (2009) found higher rates of some features related to auditory hallucinations in DID compared to schizophrenia, including loudness. Dorahy et al. (2009) commented that the voice hearing experience was more “pervasive” in those with DID,

which is reflected in this hypothesis. Laddis and Dell (2012) found higher frequencies of a number of types of auditory hallucinations in DID compared to schizophrenia.

Hypothesis Two: The DID groups would have more negative interpretations of voice hearing (metaphysical beliefs and interpretations of loss of control) than the schizophrenia group. There would be no differences between groups in positive interpretations of voices. Morrison et al. (2004) found that voice hearers have more negative interpretations of voices but not more positive interpretations of voices than non-voice hearers. Morrison et al.'s (2004) findings were extrapolated to form this hypothesis, using the idea that people with DID have more auditory hallucinations than people with schizophrenia, and therefore may experience more negative interpretations of voices.

Hypothesis Three: There would be incremental increases in the frequency of other modalities of hallucinations (visual, tactile, olfactory, and gustatory) in the three groups. The schizophrenia group would have the lowest frequency, followed by the DID with childhood abuse group, and the DID with childhood and adulthood abuse would have the highest frequency. In Dorahy et al.'s (2009) study, the DID group had higher rates of experiencing visual, olfactory, gustatory, and tactile hallucinations. Similarly, high rates of these types of hallucinations were found in Middleton and Butler's (1998) study.

Hypothesis Four: The schizophrenia group would experience a greater number of delusions and associated distress, preoccupation, and conviction, than the two DID groups. This is consistent with Laddis and Dell (2012), who found higher rates of delusions in schizophrenia participants than DID participants, and with Peters, Joseph and Garety (1999) who reported delusions in psychosis being associated with higher levels of distress, preoccupation, and conviction than members of the general public with similar beliefs.

Hypothesis Five: The schizophrenia group would have higher frequencies of formal thought disorder than the two DID groups. Formal thought disorder is relatively common in schizophrenia (e.g., Harrow & Marengo, 1986), however does not usually occur in dissociative disorders (Şar & Öztürk, 2008).

Hypothesis Six: Childhood abuse and adulthood abuse would be predictive of auditory hallucinations symptoms (distress, frequency, and attributions). Experiencing more types of abuse (e.g., childhood physical, childhood sexual, adulthood sexual and adulthood physical) has been found to be related to higher rates of hallucinations, delusions and formal thought disorder (Read et al., 2003).

Hypothesis Seven: Childhood abuse and adulthood abuse would be predictive of other modalities of hallucinations (visual, tactile, olfactory, and gustatory). There is some evidence linking childhood abuse to olfactory hallucinations and childhood and adulthood abuse to tactile hallucinations (Read et al., 2003). This hypothesis was based on the high prevalence of these types of hallucinations in DID, which has origins in childhood trauma (e.g., Dorahy et al., 2009).

Hypothesis Eight: Childhood abuse and adulthood abuse would be predictive of delusions (number of delusions, distress, preoccupation, and conviction). There is evidence of specific links between childhood abuse history and delusions (e.g., Beck & van der Kolk, 1987; Bryer et al., 1987; Read & Argyle, 1999).

Hypothesis Nine: Childhood abuse and adulthood abuse would be predictive of formal thought disorder. There is a small amount of research on childhood abuse history and prevalence of formal thought disorder. Read et al. (2003) found that childhood and adulthood abuse predicted formal thought disorder (see also Read & Argyle, 1999).

Method

Participants

Participants were inpatients and outpatients recruited from Belmont Private Hospital (Brisbane, Australia) and outpatients recruited from two services based at Hillmorton Hospital (Hereford Centre and East Adult Community Service; Christchurch, New Zealand). All participants were diagnosed with either DID or schizophrenia. A total of 67 participants were recruited and included in the study, including 51 females (76%) and 16 males (24%). The mean age of participants was 44.41 (standard deviation = 10.51). Participants were allocated to a DID group or schizophrenia group based on their diagnosis. The DID group was split into two groups depending on whether they had experienced abuse in childhood, or whether they had experienced abuse in childhood and adulthood. Thus, the three groups were created: DID with childhood abuse (n = 29), DID with childhood and adulthood abuse (n = 21), and schizophrenia (n = 17).

Design

The present study employed two non-experimental designs: A comparative descriptive design to compare symptoms across groups, and a retrospective design to explore relationships between childhood and adulthood abuse and psychotic symptoms. Quantitative measures were used to gather information about symptoms in the three participant groups.

Measures

Participants were assessed on demographics (age, sex, employment status, and marital status; Appendix A) as well as a number of psychometric scales and subscales.

The Psychotic Symptom Rating Scales (PSYRATS; Haddock et al., 1999; Appendix B) is a 17-item assessment designed to measure the severity of auditory hallucinations and delusions. The PSYRATS is a multidimensional scale that provides comprehensive information about the

nature and severity of auditory hallucinations (11 items) and delusions (6 items). The auditory hallucination subscale was used in the present study to examine similarities and differences in auditory hallucinations in the three groups. Each item measures a construct of auditory hallucinations (e.g., "Intensity of distress"), and is rated on a scale from 0 to 4. Each number on the scale has a descriptor that pertains to the specific item. The auditory hallucinations subscale of the PSYRATS has adequate internal consistency (Cronbach's α = .70) and inter-rater reliability (intraclass correlations r = .94 - .99; Kronmüller et al., 2011). In the present study, the four constructs of the PSYRATS proposed by Woodward et al. (2014) were used as measures of auditory hallucination distress, frequency, attributions (attachments of personal meaning to voices), and loudness. The four constructs were validated on a sample of 711 participants, and were found to have good reliability. Intraclass correlation coefficients (ICC) were calculated for distress (r = .93), frequency (r = .87), and attributions (r = .67). An ICC for loudness could not be calculated as it was a single item (Woodward et al., 2014). In the present study, the PSYRATS had good internal consistency (Cronbach's α = .87).

The Interpretation of Voices Inventory (IVI; Morrison et al., 2002; Appendix C) measures positive and negative interpretations of voice hearing, and contains 26 items. In the present study, this measure was used to investigate the phenomenological similarities and differences in auditory hallucination interpretations between the three participant groups. The interpretations assessed by the IVI fall into three subscales: Meta-physical beliefs about voices (e.g., "They mean that I am possessed"), positive beliefs about voices (e.g., "They keep me company"), and interpretations of loss of control (e.g., "They control the way I think"). The items are rated on a scale of one (Not at all) to four (Very much). The IVI has good internal consistency; Cronbach's α = .94 for meta-physical beliefs about voices, Cronbach's α = .80 for

positive beliefs about voices, and Cronbach's α =.88 for interpretations of loss of control (Morrison et al., 2002). Good test-retest reliability for the three subscales was reported (r = .84 for meta-physical beliefs about voices, r = .77 for positive beliefs about voices, and r = .73 for interpretations of loss of control; Morrison et al., 2002). In the present study, the IVI had good internal consistency (Cronbach's α = .89).

Four items from the Mental Health Research Institute Unusual Perceptions Schedule (MUPS; Carter et al., 1995; Appendix D) were used to measure differences in the 4 other major modalities of hallucinations (visual, tactile, olfactory, and gustatory). They ask about the frequency of the hallucinations (e.g., "Have you ever had/do you have: Experiences where you see things that others apparently can't/don't see?"), to which the participant responds on a scale from one (Never) to five (Always). In the present study, the MUPS items had acceptable internal consistency (Cronbach's α = .75).

The Peters et al. Delusions Inventory – Brief (PDI-brief; Peters, Joseph, Day, & Garety, 2004; Appendix E) is a 21-item measure of delusional ideation. Participants first answer yes or no to whether any of the experiences listed have happened to them (e.g., Do you ever feel as if there is a conspiracy against you?). If they answer yes to any of the experiences, they rate how distressing and preoccupying the experiences are, and how much conviction they felt, on a scale from one (Not at all distressing; Hardly ever think about it; Don't believe it's true) to five (Very distressing; Think about it all the time; Believe it is absolutely true). Scores of distress, preoccupation, conviction and an overall score of number of delusions are computed. The PDI-brief was used to measure the similarities and differences of delusions between the three participant groups. The PDI-brief was chosen as the three subscale scores have been found to differentiate different samples (Peters et al., 2004), and because of its good psychometric

properties. Peters et al. (2004) report that it has good internal consistency (Cronbach's α = .82), and established convergent, discriminant and criterion validity. They also report that all psychometric findings are consistent with the 40-item version of the PDI, so the brief version was chosen to reduce participant load. In the present study, the PDI-brief items had acceptable internal consistency (Cronbach's α = .79).

The Scale for the Assessment of Positive Symptoms (SAPS; Andreasen, 1984; Appendix F) was used to assess positive symptoms that occur in schizophrenia. The SAPS has four subscales: Hallucinations, Delusions, Bizarre Behaviour, and Positive Formal Thought Disorder. The Positive Formal Thought Disorder scale was used in the present study to assess frequency of formal thought disorder. It has eight items (e.g., "I do not follow a logical path of ideas to reach my conclusion") which are rated on a scale from one (Never) to five (Always). The SAPS has good inter-rater reliability (r = .84), and adequate internal consistency for schizophrenia (r = .65; Andreasen, 1995). In the present study, the positive formal thought disorder items had good internal consistency (Cronbach's α = .84).

The Dissociative Experiences Questionnaire (DES; Bernstein & Putnam, 1986; Appendix G) quantifies the level of dissociative symptoms and experiences in general population and clinical groups. People with trauma-related disorders and dissociative disorders typically score higher on this 28-item scale (Bernstein & Putnam, 1986). The DES is rated on a percentage of how often each experience happens from 0% (Never) to 100% (Always). This scale was used to measure the frequency of dissociation in the three groups. In the present study, the DES had excellent internal consistency (Cronbach's α = .96).

The DID section of the Dissociative Disorders Interview Schedule (DDIS; Ross et al., 1989; Appendix H) is comprised of four items (two or more identities, identities recurrently take

control of behaviour, lack of memory for traumatic experiences, different identities due to substance use or medical condition), which are indicative of a diagnosis of dissociative identity disorder if the first three are answered "yes", and the last one is answered "no". This was used to confirm the presence or absence of DID in each participant.

The Childhood Trauma Questionnaire – Short Form (CTQ-SF; Bernstein et al., 2003; Appendix I) is a 28-item retrospective measure of abuse (physical, sexual, and emotional) and neglect (physical and emotional) in childhood. This was used in the present study as a measure of childhood abuse frequency. The CTQ-SF has good internal consistency (Cronbach's α = .68 - .94) and good discriminant, criterion-related, and convergent validity (Bernstein et al., 2003). All of the 28 items were used, and four were adapted slightly to determine whether abuse had ceased in childhood or had continued into adulthood. This was done by having the participant answer whether these occurred before the age of 13, after the age of 18, and in the past six months. In the present study, the CTQ-SF had acceptable internal consistency (Cronbach's α = .79).

Procedure

Potential participants were given an invitation letter (Appendix J) from their treating psychiatrist or a psychiatric nurse involved in their care, which outlined what the study involved. If they wished to take part, they signed the reply slip at the bottom of the form. Two appointments were then arranged. In their first appointment, participants were provided with an information sheet outlining the research (Appendix K) and given the opportunity to ask any questions, and then signed a consent form (Appendix L) if they agreed to participate. They were administered all of the questionnaires by the researcher, except for the CTQ-SF. In the second appointment the CTQ-SF was administered by a trained professional (psychiatrist, registered nurse, clinical psychologist, or intern psychologist). In both appointments, the items from the

questionnaires were read aloud in structured interview format to the participant, who responded verbally. At the end of their second appointment, participants were given a debrief form (Appendix M), a $10 voucher, and thank you letter as a token for their participation (Appendix N). The study was reviewed and approved by the University of Canterbury Human Ethics Committee, the Belmont Private Hospital Ethics Committee, and the Canterbury Health and Disability Ethics Committee (Appendices O, P, and Q).

Data analysis

All data were entered into the Statistical Package for Social Sciences (SPSS; version 20). Statistical significance was set at $p < .05$. Exploratory data analysis was carried out, and no reasons to exclude data were found. Reliability analyses were used to calculate Cronbach's alpha for the measures used in the study.

Comparisons of demographics, abuse, and dissociation between groups

Descriptive statistics were calculated for demographic analyses, and analysis of variance (ANOVA) was used to investigate significant differences between groups on variables that were continuous (e.g., age). Chi-squared testing was used for any categorical demographic variables (e.g. sex); but was not suitable in all cases due to some groups having zero participants in a category. ANOVA was used to explore group differences in childhood abuse and dissociation. If the ANOVA was statistically significant, post hoc tests (Bonferroni) were used to demonstrate which differences between the groups were significant. Bonferroni was chosen for post hoc tests as it has more power with small numbers of comparisons than other tests, and is valid for uneven sample sizes (Field, 2013).

Psychotic symptom comparisons between groups

To test the first five hypotheses, multivariate analysis of variance (MANOVA) was used to explore differences in groups of variables (e.g., auditory hallucination distress, frequency, attributions, and loudness). When the MANOVA was significant, univariate analysis of each aspect (e.g. auditory hallucination distress) was carried out. When univariate analyses were significant, post hoc tests (Bonferroni) were used to confirm where the group differences lay. A further MANOVA was used for delusions (PDI-brief) to investigate group differences in individual items, in order to explore the types of delusions endorsed by participants with DID and schizophrenia. ANOVA was used for formal thought disorder, as it was a single-variable comparison. One assumption violation occurred in the analysis. The Levene's test for equal error variances was significant in the auditory hallucination attributions ANOVA. In this case, Games-Howell post-hoc tests were used instead of Bonferroni, as they do not assume equal variance in groups (Kremelberg, 2010). No other violations of assumptions were evident in the analysis.

Relationships between childhood and adulthood abuse and psychotic symptoms

To test the final four hypotheses, regression analyses were used. Regression analyses examined the contributions of childhood abuse and adulthood abuse on the expression of psychotic symptoms. Hierarchical regression was used to determine if childhood abuse could explain some of the variance in each symptom, and then adulthood abuse was added to the model to see if it could add further explanatory value. Some childhood abuse data was not available, due to not being able to follow up with some participants. Therefore, regression analyses used data from 57 participants.

Results

Characteristics of Groups

Descriptive statistics for age in the three groups are shown in Table 1. No significant differences were found across the three groups, F (2, 64) = 0.26, p = .77.

Table 1

Descriptive Statistics for Age Across Groups

	M (SD)	Minimum	Maximum
DID – CA and AA	45.05 (11.29)	28	62
DID – CA	45.21 (10.83)	18	70
Schizophrenia	43.00 (9.19)	27	61

Note. DID – CA = dissociative identity disorder with childhood abuse. DID – CA and AA =dissociative identity disorder with childhood abuse and adulthood abuse. M = Mean. SD = Standard Deviation.

There were differences in the number of males and females in each group. Both DID groups had more female participants than male participants. The schizophrenia group had more male participants than female participants. Further analysis was not conducted due to the DID with childhood and adulthood abuse group having no males. Descriptive statistics for sex are shown in Table 2.

Table 2

Descriptive Statistics for Sex Across Groups

Group	Male	Female
DID – CA and AA	0 (0%)	21 (100%)
DID – CA	2 (7%)	27 (93%)
Schizophrenia	14 (82%)	3 (18%)

Note. DID – CA = dissociative identity disorder with childhood abuse. DID – CA and AA =dissociative identity disorder with childhood abuse and adulthood abuse.

Table 3 presents descriptive statistics of employment status of each group. There were some differences in employment status between the groups. Further analysis was not conducted due to some groups having zero participants in a category (e.g., no schizophrenia participants employed full time).

Table 3

Descriptive Statistics for Employment Status Across Groups

Group	Employed Full Time	Employed Part Time	Unemployed	Student	Sickness Benefit
DID – CA and AA	1 (5%)	5 (24%)	3 (14%)	3 (14%)	9 (43%)
DID – CA	6 (21%)	6 (21%)	1 (3%)	2 (7%)	14 (48%)
Schizophrenia	0 (0%)	1 (6%)	0 (0%)	0 (0%)	16 (94%)

Note. DID – CA = dissociative identity disorder with childhood abuse. DID – CA and AA =dissociative identity disorder with childhood abuse and adulthood abuse.

Descriptive statistics for marital status across the three groups are reported in Table 4. None of the schizophrenia participants were married or separated, so further analysis could not be conducted.

Table 4

Descriptive Statistics for Marital Status Across Groups

Group	Married/De facto	Separated/Divorced	Single
DID – CA and AA	5 (24%)	11 (52%)	5 (24%)
DID – CA	11 (38%)	8 (28%)	10 (34%)
Schizophrenia	0 (0%)	0 (0%)	17 (100%)

Note. DID – CA = dissociative identity disorder with childhood abuse. DID – CA and AA =dissociative identity disorder with childhood abuse and adulthood abuse.

The number of participants in each group who met the screening criteria for DID are presented in Table 5. Five participants in the DID groups did not meet the screening criteria. On further examination, two participants no longer met the switching criteria and three no longer met the amnesia criteria on account of their work in therapy. It was decided to include these participants in the analysis as they each acknowledged having previously met diagnostic criteria for DID and were in treatment for that condition. Two of the schizophrenia participants met the screening criteria for DID. Following further questioning, one participant had not understood the questions and their symptoms did not fit with a diagnosis of DID. The diagnosis of the other participant was discussed with their treating psychologist who stated that neither he nor the participant's psychiatrist considered the participant to have DID. Therefore, both participants were included in the schizophrenia group.

Table 5

Descriptive Statistics for Meeting DID Criteria Across Groups

Group	Met DID criteria	Did Not Meet DID Criteria
DID – CA and AA	19 (90%)	2 (10%)
DID – CA	26 (90%)	3 (10%)
Schizophrenia	2 (12%)	15 (88%)

Note. DID – CA = dissociative identity disorder with childhood abuse. DID – CA and AA =dissociative identity disorder with childhood abuse and adulthood abuse.

Childhood Abuse and Dissociation Ratings

Mean total scores and standard deviations for childhood abuse frequency (CTQ total score) are displayed in Table 6.

Table 6

Descriptive Statistics for Childhood Abuse Scores

Group	M (SD)
DID – CA and AA	94.71 (16.33)
DID – CA	91.00 (17.98)
Schizophrenia	45.45 (12.15)

Note. DID – CA = dissociative identity disorder with childhood abuse. DID – CA and AA = dissociative identity disorder with childhood abuse and adulthood abuse. M = Mean. SD = Standard Deviation.

ANOVA revealed a significant main effect for abuse across groups, F (2, 54) = 37.00, p < .001. Post hoc tests revealed that scores of childhood abuse were significantly higher in the

DID with childhood and adulthood abuse group (p <.001) and in the DID with childhood abuse group (p < .001) than the schizophrenia group. There was no significant difference in childhood abuse scores between the two DID groups (p = .75).

Mean total scores and standard deviations for levels of dissociation, as measured by the DES, are displayed in Table 7.

Table 7

Descriptive Statistics for Dissociation Scores

Group	M (SD)
DID – CA and AA	59.89 (17.88)
DID – CA	49.38 (18.56)
Schizophrenia	23.59 (22.52)

Note. DID – CA = dissociative identity disorder with childhood abuse. DID – CA and AA = dissociative identity disorder with childhood abuse and adulthood abuse. M = Mean. SD = Standard Deviation.

ANOVA revealed a significant main effect in DES scores across groups, F (2, 64) = 17.12, p < .001, with post hoc tests revealing that levels of dissociation were significantly higher in the DID with childhood and adulthood abuse group (p < .001) and the DID group with childhood abuse group (p < .001) than in the schizophrenia group. There was no significant difference in dissociation scores between the two DID groups (p = .19).

Comparison of Psychotic Symptoms Between Groups

Analyses for comparisons of psychotic symptoms in the three groups are presented in this section.

Test of Hypothesis One - comparison of auditory hallucinations

Mean scores and standard deviations of the three groups on frequency, distress, attributions and loudness of auditory hallucinations are shown in Table 8.

Table 8

Descriptive Statistics for Auditory Hallucination Scores

Group	AH Distress M (SD)	AH Frequency M (SD)	AH Attributions M (SD)	AH Loudness M (SD)
DID – CA and AA	15.35 (4.40)	8.43 (2.61)	3.30 (1.17)	3.30 (1.33)
DID – CA	15.07 (4.51)	7.84 (3.30)	3.46 (1.48)	2.98 (1.53)
Schizophrenia	10.73 (5.76)	6.37 (3.67)	5.23 (2.37)	1.89 (1.12)

Note. DID – CA = dissociative identity disorder with childhood abuse. DID – CA and AA = dissociative identity disorder with childhood abuse and adulthood abuse. M = Mean. SD = Standard Deviation. AH = Auditory Hallucinations

MANOVA examining the four subscales of the PSYRATS across groups found a significant multivariate effect, F (8, 114) = 3.79, p = .001, η_p^2 = .21.

Univariate analysis for distress about auditory hallucinations was significant, F (2, 60) = 4.94, p = .010, η_p^2 = .14, with post hoc analyses revealing that the DID with childhood and adulthood abuse group (p = .020) and the DID with childhood abuse group (p = .019) reported significantly more distress about their auditory hallucinations than the schizophrenia group. There was no significant difference in auditory hallucination distress between the two DID groups (p = 1.00).

Univariate analysis for attributions (attaching a personal meaning to the voice) of auditory hallucinations was also significant, F (2, 60) = 7.13, p = .002, η_p^2 = .19, with post hoc analyses revealing the schizophrenia group reported significantly higher attributions of auditory hallucinations than the DID with childhood abuse group (p = .040) and the DID with childhood and adulthood abuse (p = .023). There was no significant difference in auditory hallucination attributions between the two DID groups (p = 1.00).

Univariate analysis for loudness of auditory hallucinations was significant, F (2, 60) = 4.96, p = .010, η_p^2 = .14, with post hoc analyses revealing that the DID with childhood and adulthood abuse group (p = .011) and the DID with childhood abuse group (p = .043) reported significantly louder auditory hallucinations than the schizophrenia group. There was no significant difference between the two DID groups (p = 1.00).

Univariate analysis for frequency of auditory hallucinations was not significant F (2, 60) = 1.85, p = .010, η_p^2 = .06. (p = .166), indicating no differences between the frequency of auditory hallucinations across the three groups.

Test of Hypothesis Two - Comparison of interpretation of voices

Mean scores and standard deviations of the three groups on mean interpretation of voices, metaphysical beliefs about voices, positive beliefs about voices, and interpretations of loss of control are shown in Table 9.

Table 9

Descriptive Statistics for Interpretation of Voices Scores

Group	IVI mean M (SD)	Metaphysical Beliefs M (SD)	Positive Beliefs M (SD)	Interpretations of Loss of Control M (SD)
DID – CA and AA	2.19 (0.56)	2.05 (0.69)	2.07 (0.66)	2.80 (0.90)
DID – CA	1.86 (0.48)	1.78 (0.61)	1.61 (0.48)	2.54 (0.74)
Schizophrenia	1.88 (0.54)	1.71 (0.57)	2.10 (0.83)	0.92 (0.79)

Note. DID – CA = dissociative identity disorder with childhood abuse. DID – CA and AA = dissociative identity disorder with childhood abuse and adulthood abuse. M = Mean. SD = Standard Deviation. IVI = Interpretation of Voices Inventory

MANOVA examining interpretations of voices revealed a significant multivariate effect, F (8, 122) = 3.51, p = .001, η_p^2 = .19. Univariate analysis for positive beliefs about voices was significant, F (2, 64) = 4.42, p = .016, η_p^2 = 0.12, with post hoc analyses revealing that both the DID with childhood and adulthood abuse group (p = .046) and the schizophrenia group (p = .048) reported significantly more positive beliefs about voices than the DID with childhood abuse group. There was no significant difference in positive beliefs about voices between the DID with childhood and adulthood abuse and the schizophrenia groups (p = 1.00).

Univariate analysis for interpretations of loss of control was significant, F (2, 64) = 5.91, p = .004, η_p^2 = 0.16. Post hoc analyses revealed that the DID with childhood and adulthood abuse group (p = .004) and the DID with childhood abuse group (p = .039) reported significantly

more interpretations of loss of control than the schizophrenia group. There were no significant differences in interpretations of loss of control between the two DID groups (p = .816).

Univariate analysis for mean scores of interpretation of voices was not significant, F (2, 64) = 2.68, p = .076, η_p^2 = 0.08, nor was metaphysical beliefs about voices F (2, 64) = 1.67, p = .197, η_p^2 = 0.05, indicating no differences in these variables across the three groups.

Test of Hypothesis Three - Comparison of other modalities of hallucinations

Mean scores and standard deviations for the three groups on visual, tactile, olfactory, and gustatory hallucinations are shown in Table 10.

Table 10

Descriptive Statistics for Hallucination Scores

Group	Visual Hallucinations M (SD)	Tactile Hallucinations M (SD)	Olfactory Hallucinations M (SD)	Gustatory Hallucinations M (SD)
DID – CA and AA	2.79 (1.35)	3.00 (1.22)	3.10 (1.45)	2.09 (1.09)
DID – CA	2.34 (1.17)	2.52 (1.09)	2.55 (1.24)	2.03 (0.98)
Schizophrenia	2.44 (1.54)	1.88 (1.36)	1.76 (1.35)	1.47 (0.94)

Note. DID – CA = dissociative identity disorder with childhood abuse. DID – CA and AA = dissociative identity disorder with childhood abuse and adulthood abuse. M = Mean. SD = Standard Deviation.

MANOVA for the four modalities of hallucinations across groups produced a multivariate effect that fell marginally short of significance, F (8, 122) = 1.82, p = .079, η_p^2 = .11. Exploration if univariate effects revealed the frequency of tactile hallucinations was

significant, F (2, 64) = 4.04, p = .022, η_p^2 = 0.11, with the DID with childhood and adulthood abuse group reporting significantly more tactile hallucinations than the schizophrenia group (p = .018). There were no significant differences in the frequency of tactile hallucinations between the two DID groups (p = .501), or between the DID with childhood abuse group and the schizophrenia group (p = .269).

Univariate analysis for frequency of olfactory hallucinations was significant, F (2, 64) = 4.68, p = .013, η_p^2 = 0.13. Post hoc analyses revealed that the DID with childhood and adulthood abuse group reported significantly more frequent olfactory hallucinations than the schizophrenia group (p = .010). There were no significant differences in the frequency of olfactory hallucinations between the two DID groups (p = .481), or between the DID with childhood abuse group and the schizophrenia group (p = .174).

Univariate analysis for frequency of visual hallucinations was not significant (F (2, 64) = 0.70, p = .500, η_p^2 = 0.02), nor was frequency of gustatory hallucinations (F (2, 64) = 2.19, p = .120, η_p^2 = 0.06), thus indicating no differences between the frequency of visual or gustatory hallucinations across the three groups.

Test of Hypothesis Four - Comparison of delusions

Mean scores and standard deviations of the three groups on number of delusions, along with delusional distress, preoccupation, and conviction are shown in Table 11.

.

Table 11

Descriptive Statistics for Delusions Scores

Group	PDI-brief Score M (SD)	Distress M (SD)	Preoccupation M (SD)	Conviction M (SD)
DID – CA and AA	0.41 (0.22)	3.49 (0.82)	3.32 (0.74)	3.87 (0.76)
DID – CA	0.39 (0.16)	3.43 (0.74)	3.31 (0.91)	3.61 (1.04)
Schizophrenia	0.46 (0.21)	2.98 (0.94)	3.22 (1.00)	3.66 (0.99)

Note. DID – CA = dissociative identity disorder with childhood abuse. DID – CA and AA = dissociative identity disorder with childhood abuse and adulthood abuse. M = Mean. SD = Standard Deviation. PDI-brief = Peters et al. Delusions Inventory – Brief

MANOVA across groups for the four dependent variables did not reveal a significant multivariate effect, F (8, 118) = 0.98, p = .459, η_p^2 = 0.06, indicating no significant differences in delusional characteristics across the groups.

MANOVA investigating group differences on individual items revealed a number of significant differences. Participants with DID (both groups) endorsed three items significantly more than participants with schizophrenia: “Do you ever feel as if people seem to drop hints about you or say things with a double meaning?” (F (2, 65) = 3.81, p = .027), “Do you ever feel as if some people are not what they seem to be?” (F (2, 64) = 5.41, p = .007), and “Do your thoughts ever feel alien to you in some way?” (F (2, 66) = 6.35, p = .003). Participants with schizophrenia endorsed five items significantly more than participants with DID (both groups): “Do you ever feel as if things in magazines or on TV were written especially for you?” (F (2, 65) = 3.87, p = .026), “Do you ever feel as if you are, or destined to be someone very important?” (F

(2, 66) = 11.23, $p < .001$), "Do you ever feel that you are especially close to God?" (F (2, 64) = 4.38, $p = .017$), "Do you ever think people can communicate telepathically?" (F (2, 63) = 5.36, $p = .007$), and "Do you ever feel as if you have been chosen by God in some way?" (F (2, 66) = 15.29, $p < .001$). There were no significant differences between groups in endorsement of the remaining 13 items.

Test of Hypothesis Five - Comparison of formal thought disorder

Mean scores and standard deviations of the three groups on formal thought disorder are shown in Table 12.

Table 12

Descriptive Statistics for Formal Thought Disorder Scores

	Formal Thought Disorder
Group	M (SD)
DID – CA and AA	2.70 (0.89)
DID – CA	2.46 (0.76)
Schizophrenia	2.05 (0.84)

Note. DID – CA = dissociative identity disorder with childhood abuse. DID – CA and AA = dissociative identity disorder with childhood abuse and adulthood abuse. M = Mean. SD = Standard Deviation.

ANOVA revealed a non-significant trend, F (2, 64) = 3.04, $p = .055$, $\eta_p^2 = 0.09$. Given this trend, post-hoc analyses were conducted and revealed a near-significant difference, with the DID with childhood and adulthood abuse group having more frequent formal thought disorder symptoms than the schizophrenia group ($p = .051$). There were no significant differences

between the DID with childhood abuse group and the schizophrenia group (p = .304), or between the two DID groups (p = .935).

Investigation into Contributions of Childhood and Adulthood Abuse on Psychotic Symptoms

The results for hierarchical regression analyses of the relationship between childhood and adulthood abuse and psychotic symptoms are presented in this section.

Test of Hypothesis Six – Childhood and adulthood abuse explaining aspects of auditory hallucinations

Hierarchical linear regression was used to examine whether the degree of childhood abuse (first block) and degree of adulthood abuse (second block) could account for variance in distress related to auditory hallucinations. No significant effects were found in the first block, F (1, 55) = 2.58, p = .114. When adulthood abuse was added to the model, results remained non-significant, F (2, 54) = 2.89, p = .064.

No significant effects were found for childhood abuse explaining variance in auditory hallucination frequency, F (1, 54) = 2.76, p = .103. The model still did not significantly account for variance in auditory hallucination frequency when adulthood abuse was added, F (2, 53) = 2.84, p = .067.

Childhood abuse made a significant contribution to attributions of auditory hallucinations, F (1, 52) = 5.97, p = .018, explaining 8.6% (Adj. R^2) of the variance. The addition of adulthood abuse to the model produced an overall non-significant trend, F (2, 51) = 2.93, p = .063. Thus, frequency of adulthood sexual abuse and physical abuse did not make an independent contribution.

Test of Hypothesis Seven – Childhood and adulthood abuse accounting for variance in other modalities of hallucinations

Childhood abuse produced a significant effect in other modalities of hallucinations, F (1, 55) = 14.85, $p < .001$, accounting for 19.8% (Adj. R^2) of the variance. The addition of adulthood abuse into the model produced an overall significant effect, F (2, 54) = 10.98, $p < .001$, Adj. R^2 = 26.3%, with the frequency of adulthood sexual abuse and physical abuse accounting for a further significant 7.6% of the variance in other modalities of hallucinations.

Test of Hypothesis Eight – Childhood and adulthood abuse accounting for variance in aspects of delusions

No significant effects were found for childhood abuse explaining variance in the number of delusions, F (1, 55) = 0.08, $p = .778$. The model did not significantly account for variance in the number of delusions when adulthood abuse was added (F (2, 54) = 0.10, $p = .909$).

Childhood abuse produced an overall significant effect in distress related to delusions, F (1, 53) = 6.89, $p = .011$, explaining 9.8% (Adj. R^2) of the variance. The addition of adulthood abuse into the model produced an overall significant effect, F (2, 52) = 3.38, $p = .042$, but frequency of adulthood sexual abuse and physical abuse did not make an independent contribution.

Childhood abuse fell marginally short of significantly accounting for variance in preoccupation about delusions, F (1, 53) = 3.91, $p = .053$, explaining 6.9% (Adj. R^2) of the variance. The addition of the adulthood abuse to the model did not produce a significant effect, F (2, 52) = 1.92, $p = .157$.

Childhood abuse produced a significant effect for delusion conviction, F (1, 53) = 4.25, p = .044, explaining 7.4% (Adj. R^2) of the variance. The addition of adulthood abuse to the model did not produce a significant effect, F (2, 52) = 2.41, p = .100.

Test of Hypothesis Nine – Childhood and adulthood abuse accounting for variance in formal thought disorder

Childhood abuse produced an overall significant effect for formal thought disorder symptoms, F (1, 55) = 13.21, p < .001, explaining 17.9% (Adj. R^2) of the variance. The addition of the adulthood abuse into the model continued to produce a significant effect, F (2, 54) = 6.77, p = .002. However, frequency of adulthood sexual abuse and physical abuse did not make an independent contribution to the model.

Discussion

The present study was an exploration of the potential symptom differences between DID with childhood abuse, DID with abuse continuing into adulthood, and schizophrenia. More specifically, the study aimed to investigate if differences were present across the three groups on their experiences of auditory hallucinations, other modalities of hallucinations, delusions, and formal thought disorder. Additionally, the present study aimed to highlight the links between childhood abuse and experiences of these symptoms.

Findings

This section summarises the findings of the study, examines their relationship to the hypotheses, and compares them to findings from previous research.

Characteristics of groups

The groups did not vary significantly in age, with the average age of participants being early- to mid-forties. The groups varied in sex (more females in DID groups), marital status (more married/de facto or separated/divorced in DID groups), and employment status (more employed full time or part time in DID groups). Both of the DID groups had significantly higher scores on childhood abuse and dissociation measures than the schizophrenia group. No differences were found in childhood abuse or dissociation scores between the two DID groups.

Comparison of psychotic symptoms between groups – Hypothesis One

Hypothesis One predicted that the DID group with childhood and adulthood abuse would experience higher distress, frequency, attributions, and loudness of auditory hallucinations, followed by the DID with childhood abuse group, and the schizophrenia group would have the lowest levels of these experiences. This hypothesis was partially supported. No differences were

found between the groups in the frequency of auditory hallucinations, which differed from past research that compared schizophrenia and DID. Laddis and Dell (2012) found higher frequencies of a number of types of auditory hallucinations (voices commenting, voices arguing, command voices, persecutory voices, child voices) in their DID group compared to their schizophrenia group.

Both of the DID groups in this study reported significantly higher distress and loudness of auditory hallucinations than the schizophrenia group, but no differences between the two DID groups were found. Dorahy et al. (2009) did not measure distress, but similarly found that voices were louder in DID than schizophrenia. Auditory hallucinations may be more distressing in DID than schizophrenia because they are more often representative of someone in their life (e.g., someone who abused them; Dorahy et al., 2009). Furthermore, Spiegel et al. (2011) reported that dissociative auditory hallucinations in DID are often personified and complex in nature, which may result in a more distressing experience for the voice hearer.

Contrary to the hypothesis, attributions were significantly higher in the schizophrenia group than the DID groups. Higher levels of attributions mean that there is more of a tendency to attach personal meaning to the voices, which is linked with poorer coping (Woodward et al., 2014). No differences were present in attributions between the two DID groups. This finding is not consistent with Dorahy et al.'s (2009) suggestion that voice hearing is more pervasive in DID than schizophrenia. The attributions questions in the PSYRATS included beliefs regarding the origin of voices (i.e., whether they were generated from the self or from external sources) and the location that the voices seemed like they were coming from (i.e., inside the head, close to the ears, or far away). It may be that attributions of auditory hallucinations were higher in schizophrenia due to the attributions items also assessing symptoms associated with

schizophrenia. While individuals with DID may hear voices that represent someone influential in their life (Dorahy et al., 2009), individuals with schizophrenia may be more likely to attribute their voices to external sources (McCarthy-Jones et al., 2014). Some research indicates that external voices, rather than internal voices, are more commonly experienced in schizophrenia (e.g., Nayani & David, 1996), which may have contributed to higher attributions scores in the schizophrenia group. However, this notion is not supported by the findings of Dorahy et al. (2009).

Comparison of interpretation of voices between groups – Hypothesis Two

Hypothesis Two outlined the prediction that the DID groups would have more negative interpretations of voice hearing (interpretations of loss of control and metaphysical beliefs) than the schizophrenia group, but groups would not differ in positive interpretations of voices. The results were partially supportive of the hypothesis. Both of the DID groups had significantly more interpretations of loss of control than the schizophrenia group, meaning that those with DID were more likely to think that hearing voices would mean they would lose control of their thoughts and behaviour. This finding may be linked to switching between identities in DID, where switching can occur during periods of distress (Gillig, 2009). It may be that people with DID feel like they will lose control of their behaviour when they hear voices, as the distress of the voice hearing experience could cause them to switch identities, thus losing control of their behaviour and thoughts. Additionally, a link between higher levels of sexual abuse and predominantly negative voices has been found (Andrew, Gray, & Snowden, 2008). This relationship may have occurred in the present results, as the DID participants had higher frequencies of childhood abuse than the schizophrenia participants, and more negative

interpretations of voices in the form of loss of control. There were no differences between groups in metaphysical beliefs about voices; the groups did not differ on interpretations that voices were not a part of themselves. It was thought that in DID, where voice hearing may be more pervasive, there would be more negative interpretations of voices than in schizophrenia. The scores for metaphysical beliefs about voices were relatively low for all groups, compared to scores of interpretations of loss of control. The participants in this study may have been more aware of voices belonging to themselves as many had been in therapy for a long time due to the duration of their illness.

The DID with childhood and adulthood abuse group, and the schizophrenia group had significantly more positive interpretations of voices than the DID with childhood abuse group. These two groups were more likely to have positive interpretations of voice hearing (e.g., voices help them cope). This finding was not expected, previous research comparing voice hearers with schizophrenia to non-pathological voice hearers found no difference in positive interpretations of voices (Morrison et al., 2003), so the same pattern was expected in comparing DID to schizophrenia. However, regardless of the group differences, all three groups had low scores on positive interpretations of voices, which is consistent with the idea that positive voices are not usually associated with pathological voice hearing. Positive interpretations are thought to be a coping mechanism that may be protective of voice hearing becoming pathological (Miller et al., 1993).

Comparison of other hallucinations between groups – Hypothesis Three

Hypothesis Three outlined the prediction that the DID with childhood and adulthood abuse group would experience the highest frequencies of other modalities of hallucinations,

followed by the DID with childhood abuse group, and the schizophrenia group would have the lowest frequencies of these hallucinations. The initial analysis was near significance, so the results are interpreted with caution and are considered to be tentative findings. The DID with childhood and adulthood abuse group reported significantly more tactile and olfactory hallucinations than the schizophrenia group. These findings tentatively and partially support the hypothesis. No differences were found between the three groups on the frequencies of visual hallucinations or gustatory hallucinations, which was not supportive of this hypothesis. There was a non-significant trend that was especially evident in tactile, olfactory, and gustatory hallucinations, with the highest frequency in the DID with childhood and adulthood abuse, and lowest frequency in schizophrenia. This was paired with relatively high standard deviations in all groups, indicating variability in reporting of these hallucination types. It may be that some individuals with DID and schizophrenia experience hallucinations often, and others experience them rarely. The trend in the results agreed with Dorahy et al.'s (2009) study, which found higher rates of these four hallucination types in DID than in schizophrenia participants. Relatively high rates of these four hallucination types were found in participants with DID in Middleton and Butler's (1998) study (52-82%). However, other modalities of hallucinations have also been found to be relatively prevalent in schizophrenia (30-80%; David et al., 2011), a finding inconsistent with the present results. Positive psychotic symptoms (including hallucinations) are considered to be more prevalent in DID and schizophrenia due to the increased severity of trauma and dissociation (Ross, 2006), which is consistent with the higher rates of childhood abuse and dissociation found in the DID participants in the present study.

Comparison of delusions between groups – Hypothesis Four

Hypothesis Four outlined the prediction that the schizophrenia group would have significantly more delusions and associated distress, preoccupation, and conviction than the DID groups. This hypothesis was partially supported. As expected, there were no differences between the two DID groups in number of delusions, or distress, preoccupation, and conviction of delusions. However, contrary to the hypothesis, there were also no differences in delusions (number, distress, preoccupation, conviction) between the schizophrenia group and the two DID groups. There was a trend toward more delusions in schizophrenia, however it was not statistically significant. These results are contrary to the findings of Laddis and Dell (2012) who reported higher rates of delusions in schizophrenia than DID. Some of the items in the PDI-brief, which was used to assess delusions, may have captured some fixed beliefs held by participants with DID. In particular, three items were endorsed by DID participants significantly more than the schizophrenia participants. These were: “Do you ever feel as if people seem to drop hints about you or say things with a double meaning?”, “Do you ever feel as if some people are not what they seem to be?’, and “Do your thoughts ever feel alien to you in some way?”. Each of these items were endorsed by most of the DID participants, but only approximately half of the schizophrenia participants. The first two of those items assess beliefs about the trustworthiness of other people (delusions of suspiciousness; Peters et al., 1999). These items may have been more commonly endorsed in individuals with DID if they have learnt through their life experiences (e.g., abuse) that other people are not trustworthy. The third item may have been endorsed more commonly in participants with DID with them referring to the item as thoughts belonging to different identities of themselves, that they did not feel represented them (thought disturbance; Peters et al., 1999). These items may have contributed to increasing the mean delusions score in

DID participants, resulting in a non-significant difference between the DID groups and schizophrenia group. The delusions items more commonly endorsed by the schizophrenia participants were a variety of types of delusions, such as ideations of reference and influence, grandiosity, religiosity, and paranormal beliefs (Peters et al., 1999). The distress, preoccupation, and conviction ratings results from the present study agree with Peters et al.'s (1999) study reporting delusions being associated with higher levels of distress, preoccupation, and conviction in people with schizophrenia and psychosis compared to the general public. Given there were no significant differences in delusions between the three groups, it is plausible that all groups would have similar ratings of distress, preoccupations, and conviction. Future work could determine whether individuals with DID hold such beliefs as tightly and as impenetrably as those with schizophrenia, when asked to justify their delusions.

Comparison of formal thought disorder between groups – Hypothesis Five

Hypothesis Five was also partially supported. It outlined that the schizophrenia group would have the highest frequency of formal thought disorder, and that there would be no differences between the DID groups. As predicted, there were no differences in the frequency of formal thought disorder symptoms between the DID groups, but there was also no difference in the frequency of formal thought disorder symptoms between the DID groups and the schizophrenia group. There was a non-significant trend towards increased formal thought disorder in the DID groups. This finding was unexpected, as formal thought disorder is a positive symptom commonly experienced in schizophrenia (Harrow & Marengo, 1986), but is not usually experienced in dissociative disorders (Şar & Öztürk, 2008). There may have been higher frequencies of formal thought disorder symptoms in the DID groups because the participants

were endorsing symptoms that are similar to their own experiences of switching between identities or dissociative amnesia (e.g., tangentiality and derailment).

Non-significant trends

In comparing symptoms between the two disorders, two patterns in the data were observed that did not reach statistical significance. Firstly, a pattern was observed in auditory hallucinations (distress, frequency, and loudness) and other hallucinations, of an increasing severity or frequency of the symptoms that had the schizophrenia group with the lowest frequency and severity, and DID with childhood and adulthood abuse having the highest frequency and severity, as was predicted in the hypotheses. Due to the chronicity or prolonged nature of abuse, it was predicted that the DID with childhood and adulthood abuse group would present with more severe or more frequent hallucination symptoms. Differences between the two DID groups (and in some cases differences between the DID with childhood abuse group and the schizophrenia group) did not reach statistical significance, but trends of increasing severity and frequency were observed. The trend also appeared in formal thought disorder, which was surprising given it is a symptom more commonly identified as one of schizophrenia. A second pattern emerged in delusions, a symptom more often associated with schizophrenia. Although there were no statistically significant differences between the three groups, the schizophrenia group had a trend towards higher number of delusions, as predicted in the hypotheses.

Childhood and adulthood abuse explaining variance in psychotic symptoms – Hypotheses Six, Seven, Eight, and Nine

Hypotheses Six, Seven, Eight, and Nine were predictions about relationships between childhood and adulthood abuse experiences, and psychotic symptoms. It was predicted that

childhood and adulthood abuse would account for variance in auditory hallucinations (frequency, distress, and attributions; Hypothesis Six), other modalities of hallucinations (Hypothesis Seven), delusions (number of delusions, distress, preoccupation, and conviction; Hypothesis Eight), and formal thought disorder (Hypothesis Nine).

Hypothesis Six was partially supported, as childhood abuse but not adulthood abuse accounted for a small but significant amount of variance in attributions of auditory hallucinations. The model produced a non-significant trend with the addition of adulthood abuse, and did not account for any further variance. Childhood and adulthood abuse did not significantly account for variance in distress or frequency of auditory hallucinations. Experiences of abuse during childhood may relate to attributions of auditory hallucinations as a way of coping with the traumatic experience. It may be that auditory hallucinations, when they relate to abuse history, are considered to be external or separate to the self as a protective mechanism to set apart these experiences from the self (Ellenson, 1986). This finding supports the significant amount of research demonstrating the relationship between childhood abuse and auditory hallucinations (e.g. Shevlin et al., 2007, Read & Argyle, 1999).

Hypothesis Seven was supported. Childhood abuse significantly explained variance in other modalities of hallucinations. The model remained significant and explained further variance when adulthood abuse was added. This supported previous research looking at relationships between childhood abuse and hallucinations, such as research from the National Comorbidity Survey that linked childhood sexual abuse with a higher likelihood of visual and tactile hallucinations, and childhood physical abuse with a higher likelihood of tactile hallucinations (Shevlin et al., 2007). The present research also agreed with Read et al.'s (2003) findings that tactile hallucinations were related to childhood and adulthood abuse, and visual and

olfactory hallucinations were related to childhood abuse. Childhood abuse may be related to these hallucination modalities as representations of traumatic experiences. There is evidence to suggest that tactile and olfactory hallucinatory experiences are thematically related to abuse in some cases (e.g., Reiff et al., 2012), and this may also occur in other hallucinatory experiences (Dorahy & Palmer, 2015). Tactile and olfactory hallucinations may be especially related to trauma that is experienced before the development of language (Read et al., 2003), while auditory hallucinations may be more related to trauma that occurred after acquisition of language.

Hypothesis Eight was partially supported. Childhood abuse significantly accounted for some variance in distress related to delusions, and the model remained significant when adulthood abuse was added. Childhood abuse, but not adulthood abuse, significantly explained variance in delusion conviction, and was close to significance for explaining variance in delusion preoccupation. Childhood and adulthood abuse did not significantly predict any variance in number of delusions. The present results are somewhat in agreement with Read and Argyle (1999), who found a relatively high prevalence of documented childhood abuse in those with delusions (35-50%). Similarly to hallucinations, there is evidence that delusions may often thematically represent traumatic experiences (Reiff et al., 2012). Furthermore, a relationship between sexual delusions and incestuous abuse has been reported (Beck & Van der Kolk, 1987), which supports the idea of congruence between childhood abuse experiences and delusions. It has also been suggested that delusions may be an individual's way of explaining flashbacks of traumatic experiences (Read et al., 2003), particularly those that are decontextualised and not remembered as autobiographical events (Moskowitz, Nadel, & Watts, 2008). The present results add to the research on abuse and delusions by demonstrating links between childhood abuse, and

distress and conviction related to delusions. Research into childhood abuse and delusions has presented mixed findings thus far, mainly providing evidence of links to specific types of delusions (e.g., Beck & van der Kolk, 1987; Bryer et al., 1987).

Hypothesis Nine was partially supported, with childhood abuse significantly explaining variance in formal thought disorder. The model remained significant with the addition of adulthood abuse, but adulthood abuse did not further explain variance in formal thought disorder. Past research has found evidence of formal thought disorder in 35% of those with childhood sexual abuse history and 17% of those with childhood physical abuse history (Read & Argyle, 1999). Read et al. (2003) also found that childhood and adulthood abuse predicted variance in formal thought disorder. Formal thought disorder may occur when individuals are distracted by flashbacks of traumatic experiences, or when the process of thoughts and speech are interrupted by post-traumatic or psychotic symptoms related to childhood abuse.

Overall, exploring the relationships between childhood abuse and psychotic symptoms, the results provide some support for past research in this domain. The results from the present study partially agreed with the results of Read et al. (2003), who found that experiencing more types of abuse (childhood, adulthood, physical, sexual) was related to higher rates of hallucinations, delusions, and formal thought disorder. There has otherwise been a lack of research exploring relationships between psychotic symptoms and the perhaps additive effects of experiencing both childhood and adulthood abuse. In the present study, evidence of childhood and adulthood abuse significantly predicting psychotic symptoms was only found for frequency of other modalities of hallucinations (visual, tactile, olfactory, and gustatory). Childhood abuse alone significantly accounted for variance in attributions of auditory hallucinations, conviction of delusions, distress related to delusions, formal thought disorder, and was close to significance in

predicting preoccupation with delusions. Childhood and adulthood abuse did not significantly account for any variance in frequency or distress of auditory hallucinations or distress, or number of delusions. The results from the present study provide further evidence of associations between childhood abuse and psychotic symptoms, which adds to the body of literature in this area. Apart from frequency of other modalities of hallucinations, no significant evidence for additive effects of childhood and adulthood abuse and their association with psychotic symptoms were found.

A general portrait of an 'average' DID and schizophrenia patient based on the present study

One of the main aims of this thesis was to provide information about the phenomenological similarities and differences between DID and schizophrenia. This section uses the findings to provide a general portrait of DID and schizophrenia, and it acknowledges the data may not be representative of the DID and schizophrenia populations. It is important to note that in reality, symptoms will vary between patients and can be heterogeneous, thus these portraits based on the general group data are not a substitute for individual assessment.

The 'average' DID patient according to the results of the present study is typically female, often experienced abuse in her childhood, and frequently experiences dissociation. She experiences auditory hallucinations at least once an hour, which are louder than her own voice. These auditory hallucinations are somewhat accompanied by positive interpretations, such as voices help her cope, but she mainly thinks that they will make her lose control of her thoughts and behaviour. She has experienced visual and gustatory hallucinations a few times, and experiences tactile and olfactory hallucinations sometimes. She has had few delusions, which she finds quite distressing, preoccupying, and she mostly believes that they are true. She occasionally

experiences her ideas slipping off the track into unrelated ideas, or other things distracting her and interrupting her flow of speech.

The ‘average’ schizophrenia patient according to the results of the present study is typically male, has experienced some childhood abuse, and experiences dissociation at times. He experiences auditory hallucinations at least once a day, which are about the same loudness as his own voice. These auditory hallucinations are rarely accompanied by either positive or negative interpretations. He has experienced visual, tactile, and olfactory hallucinations a few times, but has rarely experienced gustatory hallucinations. He experiences some delusions, which he finds moderately distressing and preoccupying, and which he mostly believes are true. He experiences some formal thought disorder at times, but not often.

Practical and Theoretical Implications

One of the main aims of this thesis was to highlight phenomenological differences in symptoms that occur in both DID and schizophrenia. The results from the present study add to the relatively small body of research that compares symptom experiences in DID and schizophrenia. Knowing more about the phenomenology of symptoms in both disorders leads to a greater understanding of patient’s experiences. The benefits of this are twofold. Firstly, the results from this research, in conjunction with other comparison studies, may aid in the correct diagnosis of the disorders, especially in cases where overlapping symptoms may confuse diagnosis. In particular, a number of symptoms and experiences were more common in DID in the present study: High levels of distress related to auditory hallucinations, voices that are louder than the individual’s own voice, interpretations that voices will make them lose control of their thoughts and behaviour, and higher frequencies of other modalities of hallucinations. These findings support previous comparisons that have reported phenomenological differences in DID

and schizophrenia. These include higher prevalence in DID of: Voices starting before the age of 18, hearing more than two different voices, hearing both child and adult voices, experiencing visual and tactile hallucinations, dissociation, passive influence symptoms, voices arguing, voices commenting, and persecutory voices (Dorahy et al., 2009; Laddis & Dell, 2012). Correct diagnosis may further help patients gain accessibility to the most appropriate treatments, and may reduce time spent with the wrong diagnosis or receiving inappropriate pharmacological treatment, which are common in people with DID (Middleton & Butler, 1998).

Secondly, this information may help to inform therapy targets. Some of the symptoms and attributions of the symptoms explored are associated with distress or poorer coping, and targeting these areas in therapy may provide the most benefit in terms of improving quality of life. For example, the Hearing Voices Movement sees auditory hallucinations as a non-pathological experience that is a part of human variation (Escher & Romme, 2012). They advocate against pathologising or stigmatising voice hearing, and to instead advocate working to understand the voices and reduce associated distress. The present study found that distress related to auditory hallucinations was significantly higher in DID than schizophrenia, so it may be a useful treatment target to alleviate distress associated with hallucinations to improve quality of life. Similarly, attributions of auditory hallucinations, where they are seen to have personal meaning, were higher in schizophrenia than DID. These attributions are thought to be linked with poorer coping (Woodward et al, 2014), so aiming to adjust these attributions may be an appropriate treatment target to alleviate distress in people with schizophrenia.

Another aim of the present study was to highlight relationships between childhood and adulthood abuse, and psychotic symptoms. Although only one significant result was found linking both childhood and adulthood abuse to psychotic symptoms, many relationships between

childhood abuse alone and psychotic symptoms were found. These results add to the previous literature demonstrating relationships between childhood abuse and psychotic symptoms, especially hallucinations (e.g., Read et al., 2003). Knowledge of the correlates of childhood abuse is important in order to provide the most appropriate support and interventions to those who have experienced abuse in their childhood. This knowledge could also be used to promote the use of early intervention efforts within childhood to potentially minimise the onset of such symptoms. Awareness of these relationships is important for medical professionals, so they can screen for these symptoms. Screening may detect these symptoms earlier so people get access to early interventions, when the symptoms may be more easily treated. This is particularly relevant in New Zealand, as there are high rates of childhood abuse (Fanslow Robinson, Crengle, & Perese, 2007).

Methodological Considerations

A number of methodological limitations are present in this study, which may account for some of the non-significant results and lack of expected differences between disorders in some symptoms.

This study used a convenience sample. As both DID and schizophrenia are relatively uncommon disorders that occur in less than one percent of the population (Akyüz et al., 1999; Shivashankar et al., 2013), the present study used a convenience sample to maximise participant numbers. Participants were not able to be matched on demographic variables, and differences between most of these factors (excluding age) were present between the three groups. This means that some of the differences between groups may be partially accounted for by demographic differences, rather than purely symptom differences. The majority of DID participants were sourced through a small group of psychiatrists in Brisbane, Australia, and

many were hospitalised at the time of participation. This may have meant that they were taking more psychiatric medication than usual, or had been experiencing more severe symptoms at the time, so may not be a representative sample of people with DID. Most of the participants with schizophrenia were sourced through two mental health services in Christchurch, New Zealand, that mainly work with people with chronic schizophrenia. This may have resulted in the schizophrenia group having more severe symptoms due to the chronicity of their illness, which may have contributed to some of the symptom differences failing to reach significance. This also limits the generalisability of the schizophrenia group, especially to those who have first-episode schizophrenia. In the present study, there were significantly more females in the DID groups, and significantly more males in the schizophrenia group. This is consistent with the sex distribution in the disorders, and is representative of these populations (Laddis & Dell, 2012).

Another limitation of the present research was the sample size. The researcher had significant difficulty finding and recruiting participants, particularly participants with schizophrenia, and data collection had to be ceased after 23 months due to time constraints. Appropriate statistical tests were used for uneven groups, but the group size meant that statistical significance was not achieved in some cases, due to a lack of power.

Self-report questionnaires were used to collect data. The questionnaires used were chosen for having robust psychometric properties. Although convenient, self-report questionnaires are limited by being subject to personal bias. In the participants in the present study, this may have been through a lack of insight into their symptoms, or through trying to maximise or minimise their symptoms in order to appear more or less well than they currently were. Bias could also occur by participants interpreting the questions in different ways. To mitigate this bias, the questionnaires were read aloud to participants in structured interview format. In some

participants, their participation in the study or specific questions triggered malevolent voices that would command them not to reveal some information, or to answer questions in a way that did not reflect their symptoms. Thus, they potentially did not communicate an accurate response.

Future Research Directions

This study initially aimed to have a third group of DID participants, made up of people whose abuse was ongoing (i.e., abuse from childhood that was continuing; Middleton, 2013). The aim of this was to add to the comparisons in chronicity of abuse, with the prediction that the greater chronicity would be related to more frequent or more severe hallucinatory experiences. This group had to be abandoned due to insufficient participant numbers. With greater participant numbers, future research could explore links between increased chronicity of abuse and symptom expression.

This field of research could further benefit from more comparisons of the overlapping symptoms, to further improve the understanding of the phenomenology and aid diagnostic accuracy. Attributions or interpretations of voices may be an area that provides more clues to discriminate auditory hallucination experiences between disorders. A number of DID participants commented that the voices they heard represented their conscience. It may be that some voices in DID seem more familiar to the voice hearer than voices in schizophrenia. Extending from familiarity of voices, exploring who or what the voices represent may provide further insight into phenomenological differences in voice hearing. It may be that voices in DID are more likely to represent influences from the person's lifetime, whether it be a younger version of themselves, a parent, a friend, or an abuser (Anketell et al., 2011). Dorahy et al. (2009) indicated the presence of these representations when they found the voices in DID

participants (compared to schizophrenia participants) were more likely to represent someone in their life.

There is a rapidly expanding pool of research looking into the mediating effect of dissociation in the relationship between childhood abuse and psychosis (e.g., Anketell et al., 2010; Perona-Garcelán et al., 2013). Future research could look at whether this occurs specifically in DID, which is a disorder characterised by dissociation. Other possible mediators could be investigated, such as amnesia or processing of traumatic memories. A greater understanding of these mediators may help to better inform treatment to decrease psychotic symptoms.

Specific types of abuse and their relationship with psychotic symptoms could be explored to provide more information about the relationship between abuse and psychosis. Sexual abuse, physical abuse, emotional abuse, physical neglect, and emotional neglect may be linked to different symptoms, or some may have stronger relationships with psychotic symptoms than other abuse or neglect types. This would extend from the present study and the work of Read et al. (2003), who looked at relationships between physical and sexual abuse in childhood and adulthood. A greater knowledge in this area could provide information to aid screening for psychotic symptoms in people with abuse histories, or to help promote early intervention work to possibly decrease the likelihood of developing these symptoms.

Conclusions

The present study was an exploration into the phenomenological similarities and differences in psychotic symptoms between DID (with childhood abuse, or with both childhood and adulthood abuse) and schizophrenia, and into the relationships between childhood and adulthood abuse and psychotic symptoms. The results indicated a number of phenomenological

differences between the two disorders, with one or both of the DID groups having higher auditory hallucination distress, higher interpretations of loss of control related to auditory hallucinations, louder auditory hallucinations, and higher frequencies of other modalities of hallucinations, compared to the schizophrenia group. These results potentially highlight an increased severity in some psychotic symptomology in DID. No statistically significant differences between the DID with childhood and adulthood abuse and DID with childhood abuse groups were found; no conclusive evidence was found that associated increased chronicity of abuse with more frequent or severe psychotic symptoms. Childhood and adulthood abuse both significantly accounted for variance in other modalities of hallucinations, and childhood abuse accounted for variance in auditory hallucination attributions, delusion distress and conviction, and formal thought disorder. These results add to the growing field of literature examining the correlates of adverse experiences in childhood. Future research in this area can continue to add to this work by exploring 1) who auditory hallucinations may represent, 2) the mediators between childhood abuse and psychotic symptoms in DID, and 3) the relationships between specific types of abuse or neglect and psychotic symptoms. The study was somewhat limited by sample size in the ability to generate results that were statistically significant, and the convenience sample limits the generalisability of the findings. Nonetheless, the results from this study provide further insight into the phenomenological similarities and differences in symptoms in DID and schizophrenia, which may aid in accurate diagnoses and inform treatment targets. Furthermore, the relationships between abuse and psychotic symptoms add to the existing research. This knowledge may aid screening for these symptoms in people with abuse histories, in turn aiding access to early interventions.

References

Akyüz, G., Doğan, O., Şar, V., Yargiç, L. İ., & Tutkun, H. (1999). Frequency of dissociative identity disorder in the general population in Turkey. *Comprehensive Psychiatry, 40*(2), 151-159. doi: 10.1016/S0010-440X(99)90120-7

Álvarez, M.-J., Roura, P., Osés, A., Foguet, Q., Solà, J., & Arrufat, F.-X. (2011). Prevalence and clinical impact of childhood trauma in patients with severe mental disorders. *Journal of Nervous and Mental Disease, 199*(3), 156-161. doi: 10.1097/NMD.0b013e31820c751c

Andreasen, N. C. (1984). Scale for the assessment of positive symptoms (SAPS). Iowa City: University of Iowa.

Andrew, E. M., Gray, N. S., & Snowden, R. J. (2008). The relationship between trauma and beliefs about hearing voices: a study of psychiatric and non-psychiatric voice hearers. *Psychological Medicine, 38*(10), 1409-1417. doi: 10.1017/s003329170700253x

Anketell, C., Dorahy, M. J., Shannon, M., Elder, R., Hamilton, G., Corry, M., ... & O'Rawe, B. (2010). An exploratory analysis of voice hearing in chronic PTSD: Potential associated mechanisms. *Journal of Trauma & Dissociation, 11*(1), 93-107. doi: 10.1080/15299730903143600

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders (5th ed.)*. Washington, DC: American Psychiatric Association.

Bauer, S. M., Schanda, H., Karakula, H., Olajossy-Hilkesberger, L., Rudaleviciene, P., Okribelashvili, N., & ... Stompe, T. (2011). Culture and the prevalence of hallucinations in schizophrenia. *Comprehensive Psychiatry, 52*(3), 319-325. doi:10.1016/j.comppsych.2010.06.008

Beavan, V., Read, J., & Cartwright, C. (2011). The prevalence of voice-hearers in the general population: a literature review. *Journal of Mental Health, 20*(3), 281-292. doi: 10.3109/09638237.2011.562262

Beck, J. C., & Van der Kolk, B. (1987). Reports of childhood incest and current behavior of chronically hospitalized psychotic women. *American Journal of Psychiatry, 144*(11), 1474-1476. doi: 10.1176/ajp.144.11.1474

Bentovim, A. (2002). Dissociative Identity Disorder, a developmental perspective. In Sinason, V (Ed.), *Attachment, trauma and multiplicity: Working with dissociative identity disorder*. Psychology Press

Bernstein, D. P., & Fink, L. (1998). *Childhood trauma questionnaire: A retrospective self-report: Manual*. Psychological Corporation.

Bernstein, E. M., & Putnam, F. W. (1986). Development, reliability, and validity of a dissociation scale. *The Journal of Nervous and Mental Disease, 174*(12), 727-735. doi: 10.1037/e609912012-081

Bleuler, E. (1911). *Dementia praecox oder Gruppe der Schizophrenien*. Handbuch der Psychiatrie.

Bleuler, E. (1950). *Dementia Praecox or the group of Schizophrenias*. New York (NY): International Universities Press.

Brand, B. L., Şar, V., Stavropoulos, P., Kruger, C., Korzekwa, M., Martínez-Taboas, A., Middleton, W. (in press). Separating Fact from Fiction: An Empirical Examination of Six Myths about Dissociative Identity Disorder. *Harvard Review of Psychiatry*.

Bryer, J. B., Nelson, B. A., Miller, J. B., & Krol, P. A. (1987). Childhood sexual and physical abuse as factors in adult psychiatric illness. *American Journal of Psychiatry, 144*(11), 1426-1430. doi: 10.1176/ajp.144.11.1426

Carter, D. M., Mackinnon, A., Howard, S., Zeegers, T., & Copolov, D. L. (1995). The development and reliability of the Mental Health Research Institute Unusual Perceptions Schedule (MUPS): an instrument to record auditory hallucinatory experience. *Schizophrenia Research, 16*(2), 157-165. doi: 10.1016/0920-9964(94)00069-k

Chadwick, P. A. U. L., & Birchwood, M. (1995). The omnipotence of voices. II: The Beliefs About Voices Questionnaire (BAVQ). *British Journal of Psychiatry, 166*(6), 773-776. doi: 10.1192/bjp.166.6.773

Coons, P. M., Bowman, E. S., & Milstein, V. (1988). Multiple personality disorder: A clinical investigation of 50 cases. *Journal of Nervous and Mental Disease, 176*(9), 519-527. doi: 10.1097/00005053-198809000-00001

Corstens, D., Longden, E., McCarthy-Jones, S., Waddingham, R., & Thomas, N. (2014). Emerging perspectives from the Hearing Voices Movement: implications for research and practice. *Schizophrenia Bulletin, 40*(Suppl 4), S285-S294. doi: 10.1093/schbul/sbu007

David, C. N., Greenstein, D., Clasen, L., Gochman, P., Miller, R., Tossell, J. W., . . . Rapoport, J. L. (2011). Childhood Onset Schizophrenia: High Rate of Visual Hallucinations. *Journal of the American Academy of Child & Adolescent Psychiatry, 50*(7), 681-686.e683. doi: 10.1016/j.jaac.2011.03.020

de Leede-Smith, S., & Barkus, E. (2013). A comprehensive review of auditory verbal hallucinations: lifetime prevalence, correlates and mechanisms in healthy and clinical individuals. *Frontiers in Human Neuroscience, 7*. doi: 10.3389/fnhum.2013.00367

Dell, P. F. (2006). The Multidimensional Inventory of Dissociation (MID): A comprehensive measure of pathological dissociation. *Journal of Trauma & Dissociation, 7*(2), 77-106. doi: 10.1300/J229v07n02_06

Dorahy, M. J., & Palmer, R. C. (2015). Auditory Hallucinations in Chronic Trauma Disorders: Phenomenology and Psychological Mechanisms. In C. Martin, V. Preedy, & V. Patel (Eds.), *Comprehensive Guide to Posttraumatic Stress Disorder* (pp. 1-14). Switzerland: Springer International Publishing. doi: 10.1007/978-3-319-08613-2_45-1

Dorahy, M. J., Brand, B. L., Şar, V., Krüger, C., Stavropoulos, P., Martínez-Taboas, A., ... & Middleton, W. (2014). Dissociative identity disorder: an empirical overview. *Australian and New Zealand Journal of Psychiatry, 48*(5), 402-417. doi: 10.1177/0004867414527523

Dorahy, M. J., Shannon, C., Seagar, L., Corr, M., Stewart, K., Hanna, D., . . . Middleton, W. (2009). Auditory hallucinations in dissociative identity disorder and schizophrenia with and without a childhood trauma history: Similarities and differences. *Journal of Nervous and Mental Disease, 197*(12), 892-898. doi: 10.1097/NMD.0b013e3181c299ea

Ellason, J. W., & Ross, C. A. (1995). Positive and negative symptoms in dissociative identity disorder and schizophrenia: A comparative analysis. *Journal of Nervous and Mental Disease, 183*(4), 236-241. doi: 10.1097/00005053-199504000-00009

Ellenson, G. S. (1986). Disturbances of perception in adult female incest survivors. *Social Casework 67*(3), 49-59.

Escher, S., & Romme, M. (2012). The hearing voices movement. In J. Blom & I. Sommer (Eds.) *Hallucinations. Research and Practice* (pp. 385-393). Springer New York. doi: 10.1007/978-1-4614-0959-5_28

Fanslow, J. L., Robinson, E. M., Crengle, S., & Perese, L. (2007). Prevalence of child sexual abuse reported by a cross-sectional sample of New Zealand women. *Child Abuse & Neglect, 31*(9), 935-945. doi:10.1016/j.chiabu.2007.02.009

Field, A. (2013). *Discovering statistics using IBM SPSS statistics*. Sage.

First, M. B., Spitzer, R. L., Gibbon, M., & Williams, J. B. W. (1996). *Structured Clinical Interview for DSM–IV Axis I Disorders*. Washington, DC: American Psychiatric Association

Foote, B., Smolin, Y., Kaplan, M., Legatt, M. E., & Lipschitz, D. (2006). Prevalence of Dissociative Disorders in Psychiatric Outpatients. *American Journal of Psychiatry,* 163(4), 623-629. doi: 10.1037/e609232012-154

Foote, B., Smolin, Y., Neft, D. I., & Lipschitz, D. (2008). Dissociative disorders and suicidality in psychiatric outpatients. *Journal of Nervous and Mental Disease, 196*(1), 29-36. doi: 10.1097/NMD.0b013e31815fa4e7

Friedman, S., & Harrison, G. (1984). Sexual histories, attitudes, and behavior of schizophrenic and 'normal' women. *Archives of Sexual Behavior, 13*(6), 555-567. doi: 10.1007/BF01542090

Gearon, J. S., Bellack, A. S., & Tenhula, W. N. (2004). Preliminary Reliability and Validity of the Clinician-Administered PTSD Scale for Schizophrenia. *Journal of Consulting and Clinical Psychology, 72*(1), 121-125. doi: 10.1037/0022-006X.72.1.121

Gillig, P. M. (2009). Dissociative identity disorder: A controversial diagnosis. *Psychiatry (Edgmont), 6*(3), 24-29.

Gladstone, G. L., Parker, G. B., Mitchell, P. B., Malhi, G. S., Wilhelm, K., & Austin, M.-P. (2004). Implications of childhood trauma for depressed women: An analysis of pathways from childhood sexual abuse to deliberate self-harm and revictimization. *American Journal of Psychiatry, 161*(8), 1417-1425. doi: 10.1176/appi.ajp.161.8.1417

Goff, D. C., Brotman, A. W., Kindlon, D., Waites, M., & Amico, E. (1991). The delusion of possession in chronically psychotic patients. *Journal of Nervous and Mental Disease, 179*(9), 567-571. doi: 10.1097/00005053-199109000-00009

Haddock, G., McCarron, J., Tarrier, N., & Faragher, E. B. (1999). Scales to measure dimensions of hallucinations and delusions: the psychotic symptom rating scales (PSYRATS). *Psychological Medicine, 29*(04), 879-889. doi: 10.1017/s0033291799008661

Hammersley, P., Dias, A., Todd, G., Bowen-Jones, K., Reilly, B., & Bentall, R. P. (2003). Childhood trauma and hallucinations in bipolar affective disorder: Preliminary investigation. *British Journal of Psychiatry, 182*(6), 543-547. doi: 10.1192/bjp.182.6.543

Hardy, A., Fowler, D., Freeman, D., Smith, B., Steel, C., Evans, J., . . . Dunn, G. (2005). Trauma and Hallucinatory Experience in Psychosis. *Journal of Nervous and Mental Disease*, 193(8), 501-507. doi: 10.1097/01.nmd.0000172480.56308.21

Harrow, M., & Marengo, J. T. (1986). Schizophrenic thought disorder at followup: Its persistence and prognostic significance. *Schizophrenia Bulletin,12*(3), 373. doi: 10.1093/schbul/12.3.373

Hien, D., Cohen, L., & Campbell, A. (2005). Is traumatic stress a vulnerability factor for women with substance use disorders?. *Clinical Psychology Review, 25*(6), 813-823. doi: 10.1016/j.cpr.2005.05.006

Honig, A., Romme, M. A. J., Ensink, B. J., Escher, S. D. M. A. C., Pennings, M. H. A., & deVries, M. W. (1998). Auditory hallucinations: A comparison between patients and nonpatients. *Journal of Nervous and Mental Disease, 186*(10), 646-651. doi: 10.1097/00005053-199810000-00009

Janet, P. (1907). *The major symptoms of hysteria*. Classics of Psychiatry & Behavioral Sciences Library, Division of Gryphon Editions.

Janssen, I., Krabbendam, L., Bak, M., Hanssen, M., Vollebergh, W., de Graaf, R., & van Os, J. (2004). Childhood abuse as a risk factor for psychotic experiences. *Acta Psychiatrica Scandinavica, 109*(1), 38-45. doi: 10.1046/j.0001-690X.2003.00217.x

Kay, S. R., Flszbein, A., & Opfer, L. A. (1987). The positive and negative syndrome scale (PANSS) for schizophrenia. *Schizophrenia Bulletin, 13*(2), 261. doi: 10.1093/schbul/13.2.261

Kremelberg, D. (2010). Practical Statistics: A Quick and Easy Guide to IBM® SPSS® Statistics, STATA, and Other Statistical Software. Sage Publications. doi: 10.4135/9781483385655

Laddis, A., & Dell, P. F. (2012). Dissociation and psychosis in dissociative identity disorder and schizophrenia. *Journal of Trauma & Dissociation, 13*(4), 397-413. doi: 10.1080/15299732.2012.664967

Larkin, W., & Read, J. (2008). Childhood trauma and psychosis: evidence, pathways, and implications. *Journal of Postgraduate Medicine, 54*(4), 287. doi: 10.4103/0022-3859.41437

Lataster, T., van Os, J., Drukker, M., Henquet, C., Feron, F., Gunther, N., & Myin-Germeys, I. (2006). Childhood victimisation and developmental expression of non-clinical delusional ideation and hallucinatory experiences: Victimisation and non-clinical Psychotic experiences. *Social Psychiatry and Psychiatric Epidemiology, 41*(6), 423-428. doi: 10.1007/s00127-006-0060-4

Launay, G., & Slade, P. (1981). The measurement of hallucinatory predisposition in male and female prisoners. *Personality and Individual Differences, 2*(3), 221-234. doi: 10.1016/0191-8869(81)90027-1

Lindley, S. E., Carlson, E. B., & Hill, K. R. (2014). Psychotic-like experiences, symptom expression, and cognitive performance in combat veterans with posttraumatic stress disorder. *The Journal of Nervous and Mental Disease,202*(2), 91-96. doi: 10.1097/nmd.0000000000000077

Longden, E., Madill, A., & Waterman, M. G. (2012). Dissociation, trauma, and the role of lived experience: toward a new conceptualization of voice hearing. *Psychological Bulletin, 138*(1), 28. doi: 10.1037/a0025995

Longden, E., Sampson, M., & Read, J. (2015). Childhood adversity and psychosis: generalised or specific effects?. *Epidemiology and Psychiatric Sciences,* 1-11. doi: 10.1017/s204579601500044x

McCarthy-Jones, S., & Longden, E. (2015). Auditory verbal hallucinations in schizophrenia and post-traumatic stress disorder: common phenomenology, common cause, common interventions?. *Frontiers in Psychology, 6.* doi: 10.3389/fpsyg.2015.01071

McCarthy-Jones, S., Trauer, T., Mackinnon, A., Sims, E., Thomas, N., & Copolov, D. L. (2014). A new phenomenological survey of auditory hallucinations: evidence for subtypes and

implications for theory and practice. Schizophrenia Bulletin, 40(1), 231-235. doi: 10.1093/schbul/sbs156

Middleton, W. (2013). Ongoing incestuous abuse during adulthood. *Journal of Trauma & Dissociation*, *14*(3), 251-272. doi: 10.1080/15299732.2012.736932

Middleton, W., & Butler, J. (1998). Dissociative identity disorder: An Australian series. *Australian and New Zealand Journal of Psychiatry*, *32*(6), 794-804. doi: 10.3109/00048679809073868

Miller, L. J., O'Connor, E., & DiPasquale, T. (1993). Patients' attitudes toward hallucinations. *American Journal of Psychiatry*, *150*(4), 584-588. doi: 10.1176/ajp.150.4.584

Morgan, C., & Fisher, H. (2007). Environmental factors in schizophrenia: Childhood trauma--A critical review. *Schizophrenia Bulletin*, *33*(1), 3-10. doi: 10.1093/schbul/sbl053

Morrison, A. P., Frame, L., & Larkin, W. (2003). Relationships between trauma and psychosis: A review and integration. *British Journal of Clinical Psychology*, *42*(4), 331-353. doi: 10.1348/014466503322528892

Morrison, A. P., Nothard, S., Bowe, S. E., & Wells, A. (2004). Interpretations of voices in patients with hallucinations and non-patient controls: a comparison and predictors of distress in patients. *Behaviour Research and Therapy*, *42*(11), 1315-1323. doi: 10.1016/j.brat.2003.08.009

Morrison, A. P., Wells, A., & Nothard, S. (2000). Cognitive factors in predisposition to auditory and visual hallucinations. *British Journal of Clinical Psychology, 39*, 67–78. doi: 10.1348/014466500163112

Morrison, A. P., Wells, A., & Nothard, S. (2002). Cognitive and emotional predictors of predisposition to hallucinations in non-patients. *British Journal of Clinical Psychology, 41*(3), 259-270. doi: 10.1348/014466502760379127

Moskowitz, A. (2012). Commentary on 'Dissociation and psychosis in dissociative identity disorder and schizophrenia' (Laddis & Dell). *Journal of Trauma & Dissociation, 13*(4), 414-417. doi: 10.1080/15299732.2011.621017

Moskowitz, A., Nadel, L., Watts, P., & Jacobs, W. J. (2008). Delusional atmosphere, the psychotic prodrome and decontextualized memories. *Psychosis, trauma and dissociation: Emerging perspectives on severe psychopathology*, 65-78. doi: 10.1002/9780470699652.ch5

Muenzenmaier, K., Meyer, I., Struening, E., & Ferber, J. (1993). Childhood abuse and neglect among women outpatients with chronic mental illness. *Hospital & Community Psychiatry, 44*(7), 666-670. doi: 10.1176/ps.44.7.666

Nayani, T. H., & David, A. S. (1996). The auditory hallucination: a phenomenological survey. *Psychological Medicine*, *26*(01), 177-189. doi: 10.1017/s003329170003381x

Nijenhuis, E. R., Van der Hart, O., & Kruger, K. (2002). The psychometric characteristics of the Traumatic Experiences Checklist (TEC): First findings among psychiatric outpatients. *Clinical Psychology & Psychotherapy*, *9*(3), 200-210. doi: 10.1002/cpp.332

Offen, L., Waller, G., & Thomas, G. (2003). Is reported childhood sexual abuse associated with the psychopathological characteristics of patients who experience auditory hallucinations?. *Child Abuse & Neglect, 27*(8), 919-927. doi: 10.1016/S0145-2134(03)00139-X

Oruč, L., & Bell, P. (1995). Multiple rape trauma followed by delusional parasitosis: A case report from the Bosnian war. *Schizophrenia Research, 16*(2), 173-174. doi: 10.1016/0920-9964(95)00039-O

Pearlson, G. D., Kreger, L., Rabins, P. V., Chase, G. A., Cohen, B., Wirth, J. B., . . . Tune, L. E. (1989). A chart review study of late-onset and early-onset schizophrenia. *American Journal of Psychiatry, 146*(12), 1568-1574. doi: 10.1176/ajp.146.12.1568

Perona-Garcelán, S., García-Montes, J. M., Rodríguez-Testal, J. F., Ruiz-Veguilla, M., Benítez-Hernández, M. D. M., López-Jiménez, A. M., ... & Pérez-Álvarez, M. (2013). Relationship of absorption, depersonalisation, and self-focused attention in subjects with and without hallucination proneness. *Cognitive Neuropsychiatry, 18*(5), 422-436. doi: 10.1080/13546805.2012.728133

Peters, E., Joseph, S., Day, S., & Garety, P. (2004). Measuring delusional ideation: the 21-item Peters et al. Delusions Inventory (PDI). *Schizophrenia bulletin*, *30*(4), 1005.doi: 10.1093/oxfordjournals.schbul.a007116

Peters, E. R., Joseph, S. A., & Garety, P. A. (1999). Measurement of delusional ideation in the normal population: introducing the PDI (Peters et al. Delusions Inventory). *Schizophrenia Bulletin, 25*(3), 553-576. doi: 10.1093/oxfordjournals.schbul.a033401

Pilton, M., Varese, F., Berry, K., & Bucci, S. (2015). The relationship between dissociation and voices: A systematic literature review and meta-analysis. *Clinical Psychology Review, 40,* 138-155. doi: 10.1016/j.cpr.2015.06.004

Putnam, F. W., Guroff, J. J., Silberman, E. K., & Barban, L. (1986). The clinical phenomenology of multiple personality disorder: Review of 100 recent cases. *Journal of Clinical Psychiatry, 47*(6), 285-293.

Read, J. (1998). Child abuse and severity of disturbance among adult psychiatric inpatients. *Child Abuse & Neglect, 22*(5), 359-368. doi: 10.1016/s0145-2134(98)00009-x

Read, J., & Argyle, N. (1999). Hallucinations, delusions, and thought disorder among adult psychiatric inpatients with a history of child abuse. *Psychiatric Services, 50*(11), 1467-1472. doi: 10.1176/ps.50.11.1467

Read, J., Agar, K., Argyle, N., & Aderhold, V. (2003). Sexual and physical abuse during childhood and adulthood as predictors of hallucinations, delusions and thought disorder. *Psychology and Psychotherapy: Theory, Research and Practice, 76*(1), 1-22. doi: 10.1348/14760830260569210

Read, J., Agar, K., Barker-Collo, S., Davies, E., & Moskowitz, A. (2001). Assessing suicidality in adults: Integrating childhood trauma as a major risk factor. *Professional Psychology: Research and Practice, 32*(4), 367-372. doi: 10.1037/0735-7028.32.4.367

Read, J., Fosse, R., Moskowitz, A., & Perry, B. (2014). The traumagenic neurodevelopmental model of psychosis revisited. *Neuropsychiatry, 4*(1), 65-79. Doi: 10.2217/npy.13.89

Read, J., Perry, B. D., Moskowitz, A., & Connolly, J. (2001). The contribution of early traumatic events to schizophrenia in some patients: a traumagenic neurodevelopmental model. *Psychiatry, 64*(4), 319-345. doi: 10.1521/psyc.64.4.319.18602

Read, J., van Os, J., Morrison, A. P., & Ross, C. A. (2005). Childhood trauma, psychosis and schizophrenia: A literature review with theoretical and clinical implications. *Acta Psychiatrica Scandinavica, 112*(5), 330-350. doi: 10.1111/j.1600-0447.2005.00634.x

Reiff, M., Castille, D. M., Muenzenmaier, K., & Link, B. (2012). Childhood abuse and the content of adult psychotic symptoms. *Psychological Trauma: Theory, Research, Practice, and Policy, 4*(4), 356-369. doi: 10.1037/a0024203

Romme, M. A., & Escher, A. D. (1989). Hearing voices. *Schizophrenia bulletin,15*(2), 209-216. doi: 10.1093/schbul/15.2.209

Ross, C. A. (1997). *Dissociative identity disorder: Diagnosis, clinical features, and treatment of multiple personality (2nd ed.)*. Hoboken, NJ US: John Wiley & Sons Inc. doi: 10.1097/00005053-199802000-00016

Ross, C. A. (2004). *Schizophrenia: Innovations in diagnosis and treatment*. Binghamton, NY US: Haworth Maltreatment and Trauma Press/The Haworth Press.

Ross, C. A. (2006). Dissociative identity disorder. *Current Psychosis and Therapeutics Reports, 4*(3), 112-116. doi: 10.1007/bf02629332

Ross, C. A., & Joshi, S. (1992). Schneiderian symptoms and childhood trauma in the general population. *Comprehensive Psychiatry, 33*(4), 269-273. doi: 10.1016/0010-440x(92)90052-r

Ross, C. A., Anderson, G., & Clark, P. (1994). Childhood abuse and the positive symptoms of schizophrenia. *Hospital & Community Psychiatry, 45*(5), 489-491. Doi: 10.1176/ps.45.5.489

Ross, C. A., Heber, S., Norton, G. R., Anderson, D., Anderson, G., & Barchet, P. (1989). The dissociative disorders interview schedule: A structured interview. *Dissociation, 2*(3), 169-189. doi: 10.1037/e609942012-089

Ross, C. A., Miller, S. D., Reagor, P., Bjornson, L., Fraser, G. A., & Anderson, G. (1990). Schneiderian symptoms in multiple personality disorder and schizophrenia. *Comprehensive Psychiatry, 31*(2), 111-118. doi: 10.1016/0010-440x(90)90014-j

Ross, C. A., Norton, G. R., & Wozney, K. (1989). Multiple personality disorder: An analysis of 236 cases. *The Canadian Journal of Psychiatry*, 34(5), 413-418. doi: 10.1037/e609942012-007

Saddichha, S., Kumar, R., Sur, S., & Sinha, B. N. P. (2010). First rank symptoms: concepts and diagnostic utility. *African Journal of Psychiatry, 13*(4), 263-266. doi: 10.4314/ajpsy.v13i4.61874

Sansonnet-Hayden, H., Haley, G., Marriage, K., & Fine, S. (1987). Sexual abuse and psychopathology in hospitalized adolescents. *Journal of the American Academy of Child & Adolescent Psychiatry, 26*(5), 753-757. doi: 10.1097/00004583-198709000-00023

Şar, V. (2011). Epidemiology of dissociative disorders: An overview. *Epidemiology Research International,* 1-8. doi: 10.1155/2011/404538

Şar, V., & Öztürk, E. (2008). Psychotic symptoms in complex dissociative disorders. In A. Moskowitz, I. Schafer, & M. Dorahy (Eds.), *Psychosis, Trauma and Dissociation: Emerging Perspectives on Severe Psychopathology* (pp.165-175). New York: Wiley. doi: 10.1002/9780470699652.ch12

Şar, V., Akyüz, G., & Doğan, O. (2007). Prevalence of dissociative disorders among women in the general population. *Psychiatry Research, 149*(1), 169-176. doi: 10.1016/j.psychres.2006.01.005

Schneider, K. (1959). Clinical psychopathology.(Trans. by MW Hamilton).

Schultz, R., Braun, B. G., & Kluft, R. P. (1989). Multiple personality disorder: Phenomenology of selected variables in comparison to major depression. *Dissociation: Progress in the Dissociative Disorders, 2*(1), 45-51.

Sellwood, W., Evans, G. J., Reid, G. S., Preston, P., & Palmier-Claus, J. (2012). Trauma and Psychosis: the mediating role of self-concept clarity and dissociation. *Sexual Abuse, 5*(5), 372-380. doi: j.psychres.2015.04.053

Shevlin, M., Dorahy, M., & Adamson, G. (2007). Childhood traumas and hallucinations: An analysis of the National Comorbidity Survey. *Journal of Psychiatric Research, 41*(3-4), 222-228. doi: 10.1016/j.jpsychires.2006.03.004

Shevlin, M., Houston, J. E., Dorahy, M. J., & Adamson, G. (2008). Cumulative traumas and psychosis: An analysis of the National Comorbidity Survey and the British Psychiatric Morbidity Survey. *Schizophrenia Bulletin, 34*(1), 193-199. doi: 10.1093/schbul/sbm069

Shivashankar, S., Telfer, S., Arunagiriraj, J., McKinnon, M., Jauhar, S., Krishnadas, R., & McCreadie, R. (2013). Has the prevalence, clinical presentation and social functioning of schizophrenia changed over the last 25 years?. Nithsdale schizophrenia survey revisited. *Schizophrenia Research, 146*(1–3), 349-356. doi: 10.1016/j.schres.2013.02.006

Spiegel, D. (1984). Multiple personality as a post-traumatic stress disorder. *Psychiatric Clinics of North America*. doi:10.1037/e609912012-003

Spiegel, D., Loewenstein, R. J., Lewis-Fernández, R., Sar, V., Simeon, D., Vermetten, E., ... & Dell, P. F. (2011). Dissociative disorders in DSM-5. *Depression and anxiety, 28*(12), E17-E45. doi: 10.1002/da.20923

Steel, C., Haddock, G., Tarrier, N., Picken, A., & Barrowclough, C. (2011). Auditory hallucinations and posttraumatic stress disorder within schizophrenia and substance abuse. *The Journal of Nervous and Mental Disease, 199*(9), 709-711. doi: 10.1097/nmd.0b013e318229d6e8

Steinberg, M. (1993). *Structured clinical interview for DSM-IV dissociative disorders (SCID-D).* American Psychiatric Association.

Stevenson, R. J., Langdon, R., & McGuire, J. (2011). Olfactory hallucinations in schizophrenia and schizoaffective disorder: A phenomenological survey. *Psychiatry Research, 185*(3), 321-327. doi: 10.1016/j.psychres.2010.07.032

Tandon, R., Bruijnzeel, D., & Rankupalli, B. (2013). Does change in definition of psychotic symptoms in diagnosis of schizophrenia in DSM-5 affect caseness?. *Asian Journal Of Psychiatry,6*(4), 330-332. doi:10.1016/j.ajp.2013.05.011

Tien, A. Y. (1991). Distributions of hallucinations in the population. *Social Psychiatry and Psychiatric Epidemiology, 26*(6), 287-292. doi: 10.1007/BF00789221

Varese, F., Smeets, F., Drukker, M., Lieverse, R., Lataster, T., Viechtbauer, W., . . . Bentall, R. P. (2012). Childhood adversities increase the risk of psychosis: A meta-analysis of patient-control, prospective- and cross-sectional cohort studies. *Schizophrenia Bulletin, 38*(4), 661-671. doi: 10.1093/schbul/sbs050

Wearne, D., & Genetti, A. (2015). Pseudohallucinations versus hallucinations: wherein lies the difference?. *Australasian Psychiatry, 23*(3), 254-257. doi: 10.1177/1039856215586150

Webermann, A. R., Brand, B. L., & Chasson, G. S. (2014). Childhood maltreatment and intimate partner violence in dissociative disorder patients. *European Journal of Psychotraumatology, 5*. doi: 10.3402/ejpt.v5.24568

Whitfield, C. L., Dube, S. R., Felitti, V. J., & Anda, R. F. (2005). Adverse childhood experiences and hallucinations. *Child Abuse & Neglect, 29*(7), 797-810. doi: 10.1016/j.chiabu.2005.01.004

Woodward, T. S., Jung, K., Hwang, H., Yin, J., Taylor, L., Menon, M., ... & Erickson, D. (2014). Symptom dimensions of the psychotic symptom rating scales in psychosis: a multisite study. *Schizophrenia Bulletin, 40*(Suppl 4), S265. doi: 10.1093/schbul/sbu014

Appendices

Appendix A

Demographic Questionnaire

1. What is your sex? M F
2. What is your age? _____
3. What is your employment status?
   a. Employed full time
   b. Employed part time
   c. Unemployed
   d. Student
   e. Sickness beneficiary
   f. Other, please state _____
4. What is your marital status?
   a. Married/de facto relationship
   b. Separated/Divorced
   c. Single

Appendix B

Psychotic Symptom Rating Scales

I am going to ask you a few questions about auditory hallucinations and delusions which you may or may not experience. Auditory hallucinations are experiences when you hear things that aren't really there and that other people don't hear. They may be voices or just noises. Delusions are beliefs that you hold with strong conviction, even though there is strong evidence that they are not true.

A Auditory hallucinations

1 Frequency – How often are the voices present?
0. Voices not present or present less than once a week
1. Voices occur for at least once a week
2. Voices occur at least once a day
3. Voices occur at least once an hour
4. Voices occur continuously or almost continuously i.e. stop for only a few seconds or minutes

2 Duration – How long do the voices last?
0. Voices not present
1. Voices last for a few seconds, fleeting voices
2. Voices last for several minutes
3. Voices last for at least one hour
4. Voices last for hours at a time

3 Location – Where do you feel that the voices are coming from?
0. No voices present
1. Voices sound like they are inside head only
2. Voices outside the head, but close to ears or head. Voices inside the head may also be present
3. Voices sound like they are inside or close to ears and outside head away from ears
4. Voices sound like they are from outside the head only

4 Loudness – How loud are the voices?
0. Voices not present
1. Quieter than own voice, whispers.
2. About the same loudness as own voice
3. Louder than own voice
4. Extremely loud, shouting

5 Beliefs re-origin of voices – Where do you think the voices are generated from?
0. Voices not present

1. Believes voices to be solely internally generated and related to self
2. Holds <50% conviction that voices originate from external causes
3. Holds ≥50% conviction (but <100%) that voices originate from external causes
4. Believes voices are solely due to external causes (100% conviction)

6 Amount of negative content of voices – How unpleasant is the content of what the voices say?
0. No unpleasant content
1. Occasional unpleasant content (<10%)
2. Minority of voice content is unpleasant or negative (<50%)
3. Majority of voice content is unpleasant or negative (≥50%)
4. All of voice content is unpleasant or negative

7 Degree of negative content – How bad is the content of the voices?
0. Not unpleasant or negative
1. Some degree of negative content, but not personal comments relating to self or family e.g. swear words or comments not directed to self, e.g. 'the milkman's ugly'
2. Personal verbal abuse, comments on behaviour e.g. 'shouldn't do that or say that'
3. Personal verbal abuse relating to self-concept e.g. 'you're lazy, ugly, mad, perverted'
4. Personal threats to self e.g. threats to harm self or family, extreme instructions or commands to harm self or others

8 Amount of distress – How often are the voices distressing?
0. Voices not distressing at all
1. Voices occasionally distressing, majority not distressing (<10%)
2. Minority of voices distressing (<50%)
3. Majority of voices distressing, minority not distressing (≥50%)
4. Voices always distressing

9 Intensity of distress – To what degree are the voices distressing?
0. Voices not distressing at all
1. Voices slightly distressing
2. Voices are distressing to a moderate degree
3. Voices are very distressing, although subject could feel worse
4. Voices are extremely distressing, feel the worst he/she could possibly feel

10 Disruption to life caused by voices – How do the voices disrupt your life?
0. No disruption to life, able to maintain social and family relationships (if present)
1. Voices causes minimal amount of disruption to life e.g. interferes with concentration although able to maintain daytime activity and social and family relationships and be able to maintain independent living without support
2. Voices cause moderate amount of disruption to life causing some disturbance to daytime activity and/or family or social activities. The patient is not in hospital although may live in supported accommodation or receive additional help with daily living skills

3. Voices cause severe disruption to life so that hospitalisation is usually necessary. The patient is able to maintain some daily activities, self-care and relationships while in hospital. The patient may also be in supported accommodation but experiencing severe disruption of life in terms of activities, daily living skills and/or relationships
4. Voices cause complete disruption of daily life requiring hospitalization. The patient is unable to maintain any daily activities and social relationships. Self-care is also severely disrupted.

11 Controllability of voices – How much can you control the voices?
0. Subject believes they can have control over the voices and can always bring on or dismiss them at will
1. Subject believes they can have some control over the voices on the majority of occasions
2. Subject believes they can have some control over their voices approximately half of the time
3. Subject believes they can have some control over their voices but only occasionally. The majority of the time the subject experiences voices which are uncontrollable
4. Subject has no control over when the voices occur and cannot dismiss or bring them on at all

B Delusions

1 Amount of preoccupation with delusions – How much do you think about the beliefs?
0. No delusions, or delusions which the subject thinks about less than once a week
1. Subject thinks about beliefs at least once a week
2. Subject thinks about beliefs at least once a day
3. Subject thinks about beliefs at least once an hour
4. Subject thinks about delusions continuously or almost continuously

2 Duration of preoccupation with delusions – How long do your thoughts about the beliefs last?
0. No delusions
1. Thoughts about beliefs last for a few seconds, fleeting thoughts
2. Thoughts about delusions last for several minutes
3. Thoughts about delusions last for at least 1 hour
4. Thoughts about delusions usually last for hours at a time

3 Conviction – How much do you believe the delusions
0. No conviction at all
1. Very little conviction in reality of beliefs,<10%
2. Some doubts relating to conviction in beliefs, between 10-49%
3. Conviction in belief is very strong, between 50-99%
4. Conviction is 100%

4 Amount of distress – How often do the beliefs cause you distress?
0. Beliefs never cause distress
1. Beliefs cause distress on the minority of occasions
2. Beliefs cause distress on <50% of occasions
3. Beliefs cause distress on the majority of occasions when they occur between 50-99% of time

4. Beliefs always cause distress when they occur

5 Intensity of distress – How distressing do you find the beliefs?
0. No distress
1. Beliefs cause slight distress
2. Beliefs cause moderate distress
3. Beliefs cause marked distress
4. Beliefs cause extreme distress, could not be worse

6 Disruption to life caused by beliefs – How much do the beliefs disrupt your normal life?
0. No disruption to life, able to maintain independent living with no problems in daily living skills. Able to maintain social and family relationships (if present)
1. Beliefs cause minimal amount of disruption to life, e.g. interferes with concentration although able to maintain daytime activity and social and family relationships and be able to maintain independent living without support
2. Beliefs cause moderate amount of disruption to life causing some disturbance to daytime activity and/or family or social activities. The patient is not in hospital although may live in supported accommodation or receive additional help with daily living skills
3. Beliefs cause severe disruption to life so that hospitalisation is usually necessary. The patient is able to maintain some daily activities, self-care and relationships while in hospital. The patient may be also be in supported accommodation but experiencing severe disruption of life in terms of activities, daily living skills and/or relationships.
4. Beliefs cause complete disruption of daily life requiring hospitalization. The patient is unable to maintain any daily activities and social relationships. Self-care is also severely disrupted.

Appendix C

Interpretation of Voices Inventory

I am going to ask you a few questions about your experiences of hearing voices and how they make you feel.

If I were to hear sounds or voices that other people could not hear, I would probably think that…

Response format: 1 = not at all, 2 = somewhat, 3 = moderately so, 4 = very much

1	They are a sign that I am being punished.	1 2 3 4
2	They help me keep control.	1 2 3 4
3	They would make me harm someone.	1 2 3 4
4	They mean I have done something bad.	1 2 3 4
5	They mean that I am close to God.	1 2 3 4
6	They mean I will do bad things.	1 2 3 4
7	They allow me to help others.	1 2 3 4
8	They mean that I have been chosen.	1 2 3 4
9	They make me important.	1 2 3 4
10	They will make me go crazy.	1 2 3 4
11	They mean I will lose control of my behaviour.	1 2 3 4
12	They will take over my mind.	1 2 3 4
13	They have come from the spiritual world.	1 2 3 4
14	They are a sign that I am evil.	1 2 3 4
15	They will harm me physically.	1 2 3 4
16	They mean I am possessed.	1 2 3 4

17	They have to be obeyed.	1 2 3 4
18	They make me special.	1 2 3 4
19	They help me cope.	1 2 3 4
20	They keep me company.	1 2 3 4
21	I would not cope without them.	1 2 3 4
22	They mean I will harm myself.	1 2 3 4
23	They control the way I think.	1 2 3 4
24	They protect me.	1 2 3 4
25	If I do not obey them, something bad will happen.	1 2 3 4
26	They mean I am a bad person.	1 2 3 4

Subscales:
Meta-physical beliefs about voices: 1, 3, 4, 5, 6, 8, 13, 14, 15, 16, 17, 22, 25, 26
Positive beliefs about voices: 2, 7, 9, 18, 19, 20, 21, 24
Interpretations of loss of control: 10, 11, 12, 22, 23

Appendix D

Mental Health Research Institute Unusual Perceptions Scale

This questionnaire will ask you about some experiences you may or may not have had to do with seeing, feeling, smelling, and tasting things.

Response format:
1: Never, 2: A few times, 3: Sometimes, 4: A lot of times, 5: Always.

Have you ever had/do you have:

1a	Have you ever had/do you have: Experiences where you see things that others apparently can't/don't see?	1 2 3 4 5
1b	Do you see a person?	Yes No
1c	Do you see an object?	Yes No
1d	If it is a person, is it someone you have met before?	Yes No
1e	Do you feel like the person will harm you?	Yes No
1f	Do you feel like the person will protect you?	Yes No
1g	Is the person a religious figure?	Yes No
1h	If yes, what sort of emotions does this make you feel?	Explain:
2	Have you ever had/do you have: Experiences where you feel things touching you that apparently aren't there?	1 2 3 4 5
3	Have you ever had/do you have: Experiences where you can smell things that others apparently can't smell?	1 2 3 4 5
4	Have you ever had/do you have: Experiences where you can taste certain things that you haven't recently eaten/tasted?	1 2 3 4 5
5a	Do these experiences occur while hearing voices:	Yes No
5b	Around the same time as hearing the voices	Yes No
5c	Precisely at the same time as the voices	Yes No
5d	Did the onset of the voices occur at the same time, before, after, or at an unrelated time to the other hallucinatory experiences?	Same Before After Unrelated

Appendix E

Peters et al. Delusions Inventory – brief

This questionnaire is designed to measure beliefs and vivid mental experiences. We believe that they are much more common than has previously been supposed, and that most people have had some such experiences during their lives.
Please answer the following questions as honestly as you can. There are no right or wrong answers, and there are no trick questions.
Please note that we are NOT interested in experiences people may have had when under the influence of drugs.

IT IS IMPORTANT THAT YOU ANSWER *ALL* QUESTIONS.
For the questions you answer YES to, we are interested in:
(a) how distressing these beliefs or experiences are
(b) how often you think about them; and
(c) how true you believe them to be.

We would like you to circle the number which corresponds most closely to how distressing this belief is, how often you think about it, and how much you believe that it is true.

The response format is as follows:
(a) 1= Not at all distressing, 5= Very distressing
(b) 1= Hardly ever think about it, 5= Think about it all the time
(c) 1= Don't believe it's true, 5= Believe it is absolutely true

If you answer NO please move on to the next question.

1	Do you ever feel as if people seem to drop hints about you or say things with a double meaning?	Yes No	Distress: 1 2 3 4 5 Preoccupation: 1 2 3 4 5 Conviction: 1 2 3 4 5
2	Do you ever feel as if things in magazines or on TV were written especially for you?	Yes No	Distress: 1 2 3 4 5 Preoccupation: 1 2 3 4 5 Conviction: 1 2 3 4 5
3	Do you ever feel as if some people are not what they seem to be?	Yes No	Distress: 1 2 3 4 5 Preoccupation: 1 2 3 4 5 Conviction: 1 2 3 4 5
4	Do you ever feel as if you are being persecuted in some way?	Yes No	Distress: 1 2 3 4 5 Preoccupation: 1 2 3 4 5 Conviction: 1 2 3 4 5
5	Do you ever feel as if there is a conspiracy against you?	Yes No	Distress: 1 2 3 4 5 Preoccupation: 1 2 3 4 5 Conviction: 1 2 3 4 5
6	Do you ever feel as if you are, or destined to be someone very important?	Yes No	Distress: 1 2 3 4 5 Preoccupation: 1 2 3 4 5

			Conviction: 1 2 3 4 5
7	Do you ever feel that you are a very special or unusual person?	Yes No	Distress: 1 2 3 4 5 Preoccupation: 1 2 3 4 5 Conviction: 1 2 3 4 5
8	Do you ever feel that you are especially close to God?	Yes No	Distress: 1 2 3 4 5 Preoccupation: 1 2 3 4 5 Conviction: 1 2 3 4 5
9	Do you ever think people can communicate telepathically?	Yes No	Distress: 1 2 3 4 5 Preoccupation: 1 2 3 4 5 Conviction: 1 2 3 4 5
10	Do you ever feel as if electrical devices such as computers can influence the way you think?	Yes No	Distress: 1 2 3 4 5 Preoccupation: 1 2 3 4 5 Conviction: 1 2 3 4 5
11	Do you ever feel as if you have been chosen by God in some way?	Yes No	Distress: 1 2 3 4 5 Preoccupation: 1 2 3 4 5 Conviction: 1 2 3 4 5
12	Do you believe in the power of witchcraft, voodoo or the occult?	Yes No	Distress: 1 2 3 4 5 Preoccupation: 1 2 3 4 5 Conviction: 1 2 3 4 5
13	Are you often worried that your partner may be unfaithful?	Yes No	Distress: 1 2 3 4 5 Preoccupation: 1 2 3 4 5 Conviction: 1 2 3 4 5
14	Do you ever feel that you have sinned more than the average person?	Yes No	Distress: 1 2 3 4 5 Preoccupation: 1 2 3 4 5 Conviction: 1 2 3 4 5
15	Do you ever feel that people look at you oddly because of your appearance?	Yes No	Distress: 1 2 3 4 5 Preoccupation: 1 2 3 4 5 Conviction: 1 2 3 4 5
16	Do you ever feel as if you had no thoughts in your head at all?	Yes No	Distress: 1 2 3 4 5 Preoccupation: 1 2 3 4 5 Conviction: 1 2 3 4 5
17	Do you ever feel as if the world is about to end?	Yes No	Distress: 1 2 3 4 5 Preoccupation: 1 2 3 4 5 Conviction: 1 2 3 4 5
18	Do your thoughts ever feel alien to you in some way?	Yes No	Distress: 1 2 3 4 5 Preoccupation: 1 2 3 4 5 Conviction: 1 2 3 4 5
19	Have your thoughts ever been so vivid that you were worried other people would hear them?	Yes No	Distress: 1 2 3 4 5 Preoccupation: 1 2 3 4 5 Conviction: 1 2 3 4 5
20	Do you ever feel as if your own thoughts were being echoed back to you?	Yes No	Distress: 1 2 3 4 5 Preoccupation: 1 2 3 4 5 Conviction: 1 2 3 4 5
21	Do you ever feel as if you are a robot or zombie without a will of your own?	Yes No	Distress: 1 2 3 4 5 Preoccupation: 1 2 3 4 5 Conviction: 1 2 3 4 5

Appendix F

Scale for the Assessment of Positive Symptoms

These eight questions ask you about your speech and patterns of thought.

How often do the following happen to you?

Response format:
1=Never, 2=A little, 3= Sometimes, 4=Often, 5=Always

1	When I am talking, my ideas slip off the track and into ideas that are only slightly related or are unrelated. (Derailment)	1 2 3 4 5
2	When someone asks me a question, I reply with something only slightly related or something unrelated. (Tangentiality)	1 2 3 4 5
3	People find that my speech is hard to understand. (Incoherence)	1 2 3 4 5
4	I do not follow a logical path of ideas to reach my conclusion. (Illogicality)	1 2 3 4 5
5	My speech is indirect and delayed in reaching my goal idea. (Circumstantiality)	1 2 3 4 5
6	My speech is rapid and I speak faster than most other people. (Pressure of speech)	1 2 3 4 5
7	When I notice other things around me, they distract me and interrupt the flow of what I am saying. (Distractible speech)	1 2 3 4 5
8	I choose words which have related sounds in them instead of words that would make a sensible sentence. (Changing)	1 2 3 4 5

Appendix G

Dissociative Experiences Scale

These questions describe experiences that you may have in your daily life. Your answer should show how often these experiences happen to you when you **ARE NOT** under the influence of alcohol or drugs. Answer with a number from 0% to 100% to show what percentage of the time this happens to you. If it happens 45% of the time, circle both 40% and 50%.

Date_____ Age_____ Sex: M F

1. Some people have the experience of driving or riding in a car or bus or subway and suddenly realising that they don't remember what has happened during all or part of the trip.
(NEVER) 0% 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

2. Some people find that sometimes they are listening to someone talk and they suddenly realise that they did not hear part or all of what was said.
(NEVER) 0% 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

3. Some people have the experience of finding themselves in a place and having no idea how they got there.
(NEVER) 0% 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

4. Some people have the experience of finding themselves dressed in clothes that they don't remember putting on.
(NEVER) 0% 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

5. Some people have the experience of finding new things among their belongings that they do not remember buying.
(NEVER) 0% 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

6. Some people sometimes find that they are approached by people that they do not know who call them by another name or insist that they have met them before.
(NEVER) 0% 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

7. Some people sometimes have the experience of feeling as though they are standing next to themselves or watching themselves do something and they actually see themselves as if they were looking at another person.
(NEVER) 0% 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

8. Some people are told that they sometimes do not recognise friends or family members.
(NEVER) 0% 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

9. Some people find that they have no memory for some important events in their lives (for example, a wedding or graduation).
(NEVER) 0% 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

10. Some people have the experience of being accused of lying when they do not think that they have lied.
(NEVER) 0% 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

11. Some people have the experience of looking in a mirror and not recognising themselves.
(NEVER) 0% 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

12. Some people have the experience of feeling that other people, objects and the world around them are not real.
(NEVER) 0% 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

13. Some people have the experience of feeling that their body does not seem to belong to them.
(NEVER) 0% 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

14. Some people have the experience of sometimes remembering a past event so vividly that they feel as if they were reliving that event.
(NEVER) 0% 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

15. Some people have the experience of not being sure whether things that they remember happening really did happen or whether they just dreamed them.
(NEVER) 0% 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

16. Some people have the experience of being in a familiar place but finding it strange and unfamiliar.
(NEVER) 0% 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

17. Some people find that when they are watching television or a movie they become so absorbed in the story that they are unaware of other events happening around them.
(NEVER) 0% 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

18. Some people find that they become so involved in a fantasy or daydream that it feels as though it were really happening to them.
(NEVER) 0% 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

19. Some people find that they sometimes are able to ignore pain.
(NEVER) 0% 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

20. Some people find that they sometimes sit staring off into space, thinking of nothing, and are not aware of the passage of time.
(NEVER) 0% 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

21. Some people sometimes find that when they are alone they talk out loud to themselves.
(NEVER) 0% 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

22. Some people find that in one situation they may act so differently compared with another situation that they feel almost as if they were two different people.
(NEVER) 0% 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

23. Some people sometimes find that in certain situations they are able to do things with amazing ease and spontaneity that would usually be difficult for them (for example, sports, work, social situations, etc.).
(NEVER) 0% 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

24. Some people sometimes find that they cannot remember whether they have done something or have just thought about doing this (for example, not knowing whether they have just mailed a letter or have just thought about mailing it).
(NEVER) 0% 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

25. Some people find evidence that they have done things that they do not remember doing.
(NEVER) 0% 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

26. Some people sometimes find writings, drawings, or notes among their belongings that they must have done but cannot remember doing.
(NEVER) 0% 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

27. Some people sometimes find that they hear voices inside their head that tell them to do things or comment on things that they are doing.
(NEVER) 0% 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

28. Some people sometimes feel as if they are looking at the world through a fog so that people and objects appear far away or unclear.
(NEVER) 0% 10 20 30 40 50 60 70 80 90 100 (ALWAYS)

Appendix H

Dissociative Disorders Interview Schedule-Dissociative Identity Disorder

The following four questions will ask you about possible inconsistencies in your personality and identity states.

1. Have you ever felt like there are two or more distinct identities or personalities within yourself, each of which has its own pattern of perceiving, thinking, and relating to self and others?

Yes=1 No=2 Unsure=3

2. Do at least two of the identities or personalities recurrently take control of your behaviour?

Yes=1 No=2 Unsure=3

3. Have you ever experienced inability to recall important personal information, particularly of a traumatic or stressful nature, that is too extensive to be explained by ordinary forgetfulness?

Yes=1 No=2 Unsure=3

4. Is the problem with different identities or personalities due to substance abuse (e.g. alcohol blackouts) or a general medical condition?

Yes=1 No=2 Unsure=3

Appendix I

Childhood Trauma Questionnaire

CTQ Identification_____ Age_____ Sex_____

When I was growing up…		Never True	Rarely True	Sometimes True	Often True	Very Often True
1. I didn't have enough to eat.		•	•	•	•	•
2. I knew that there was someone to take care of me and protect me.		•	•	•	•	•
3. People in my family called me things like "stupid", "lazy" or "ugly."		•	•	•	•	•
4. My parents were too drunk or high to take care of the family.		•	•	•	•	•
5. There was someone in my family who helped me feel I was important or special.		•	•	•	•	•
6. I had to wear dirty clothes.		•	•	•	•	•
7. I felt loved.		•	•	•	•	•
8. I thought that my parents wished I had never been born.		•	•	•	•	•
9. I got hit so hard by someone in my family that I had to see a doctor or go to hospital.		•	•	•	•	•
10. There was nothing I wanted to change about my family.		•	•	•	•	•
11. People in my family hit me so hard that it left me with bruises or marks.	- Before the age of 13	•	•	•	•	•
	- After the age of 18	•	•	•	•	•
	- In the past 6 months	•	•	•	•	•
12. I was punished with a belt, a board, a cord, or some other hard object.		•	•	•	•	•
13. People in my family looked out for each other.		•	•	•	•	•
14. People in my family said hurtful or insulting things to me.		•	•	•	•	•
15. I believe that I was physically abused.	- Before the age of 13	•	•	•	•	•
	- After the age of 18	•	•	•	•	•
	- In the past 6 months	•	•	•	•	•
16. I had the perfect childhood.		•	•	•	•	•
17. I got hit or beaten so badly that it was noticed by someone like a teacher, neighbour or doctor.		•	•	•	•	•
18. I felt that someone in my family hated me.		•	•	•	•	•
19. People in my family felt close to each other.		•	•	•	•	•
20. Someone in my family touched me in	- Before the age of 13	•	•	•	•	•
	- After the age of 18	•	•	•	•	•

a sexual way, or made me touch them.	- In the past 6 months	•	•	•	•	•
21. Someone threatened to hurt me or tell lies about me unless I did something sexual with them.		•	•	•	•	•
22. I had the best family in the world.		•	•	•	•	•
23. Someone tried to make me do sexual things or watch sexual things.		•	•	•	•	•
24. Someone molested me.		•	•	•	•	•
25. I believe that I was emotionally abused		•	•	•	•	•
26. There was someone to take me to the doctor if I needed it.		•	•	•	•	•
27. I believe that I was sexually abused	- Before the age of 13	•	•	•	•	•
	- After the age of 18	•	•	•	•	•
	- In the past 6 months	•	•	•	•	•
28. My family was a source of strength and support.		•	•	•	•	•

Appendix J

Invitation letter

College of Science

Department of Psychology
Tel: +64 3 364 2902, Fax: + 64 364 2181
Email: rachael.palmer@pg.canterbury.ac.nz

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

Invitation letter

Title: Symptoms in those with psychiatric illnesses.

We are conducting a research study looking at symptoms of some psychiatric illnesses in order to further understand how these differ to other psychiatric illnesses. This study may be of interest to you and more details can be found in this letter.

This letter provides some information about the nature of the research and how to volunteer. Before you decide, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and talk to others about the study if you wish. If you have any questions please ask the person who gave you this letter (e.g. Lenaire Seager, Prof Warwick Middleton) or contact Martin Dorahy (Clinical Psychologist/Associate Professor, University of Canterbury) either by phone (+643 3643416) or email (martin.dorahy@canterbury.ac.nz).

What is the purpose of the study?
We are trying to understand a little more about the symptoms that people with different types of psychological difficulties experience. Data from this study may help provide new knowledge and interventions. We are especially interested in how those with dissociative identity disorder differ from people with other psychiatric problems.

To do this, we are asking people who are currently seeking assistance for their psychological difficulties if they would like to volunteer to help us with a study that looks at these issues.

Do I have to take part?
No, it is up to you whether you decide to take part. If you do want to be involved, please put your name and preferred contact number on the reply slip below and give it to Lenaire Seager or Prof Warwick Middleton. If you decide not to take part this will be respected and understood and your therapy will not be affected.

What will happen to me if I take part?
If you decide you would like to take part, a clinician from the research team (see below) will contact you to arrange an appointment that will be suitable and convenient for you. This appointment will take place at Belmont Private Hospital.
If you agree to participate you will attend two appointments. One will be with a clinician (Warwick, Lenaire, or Martin, see below) who will go through one questionnaire with you (this will take approximately 10-15 minutes and will look at distressing events that you may have experienced in your life). The other will be with a Masters student (Rachael Palmer, MSc Psychology, University of Canterbury) who will go through a number of brief questionnaires with you (this will take approximately 50-90 minutes). The questionnaires will ask about some of the experiences and symptoms that you may or may not have had. You will be asked to rate statements on a scale to indicate the extent to which you agree or disagree with them. You will not be asked to read anything or write anything as you will be asked the questions verbally and you say your responses back.

Will my taking part in this study be kept confidential?
Yes. All the information about your participation in this study will be kept confidential.

Contact Details:
You are free to ask any further questions to Prof Warwick Middleton, Rachael Palmer (the researcher; University of Canterbury) at rachael.palmer@pg.canterbury.ac.nz, or Assoc Prof Martin Dorahy (University of Canterbury) on (+643) 3643416 or martin.dorahy@canterbury.ac.nz. If you are interested in participating in this research, please complete the reply slip below and give it to Prof Warwick Middleton or Lenaire Seager.

Names of research team
Rachael Palmer (Masters of Science (Psychology) student, University of Canterbury); Assoc Prof Martin Dorahy (Clinical Psychologist; University of Canterbury); Prof Warwick Middleton (Psychiatrist; Belmont Private Hospital); Lenaire Seagar (Psychiatric Nurse; Unit Manager, Belmont Private Hospital).

Reply Slip

I consent to be contacted by a member of the Research team about the research project: ☐

Signed (participant): _____ Date: _____

Print name (participant): _____ Telephone: _____

Appendix K

Participant Information Sheet

College of Science

Department of Psychology
Tel: +64 3 364 2902, Fax: + 64 364 2181
Email: rachael.palmer@pg.canterbury.ac.nz

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

Participant Information Form

Title: Symptoms in those with psychiatric illnesses.

You are invited to take part in this study. Please read the information below which outlines what is involved in this research. If you would like to complete this survey, which will take approximately 50-90 minutes, you can give your consent by signing the consent form. To thank you for your time and participation, you will be given a $10 Westfield voucher if you decide to take part. This study is being undertaken by Rachael Palmer, Prof Warwick Middleton, Lenaire Seager, and Assoc Prof Martin Dorahy, and some of it will form the basis of a masters thesis (Rachael Palmer). It has been reviewed and approved by the University of Canterbury Human Ethics Committee (Ref: 2013/40). They can be contacted at: human-ethics@canterbury.ac.nz, on 03 364 2987, or at Okeover House, University of Canterbury, Christchurch, 8041, New Zealand.

What is the purpose of the Study?

We are trying to understand a little more about the symptoms that people with different types of psychological difficulties experience. Data from this study may help provide direction for treating the disorder. We are especially interested in how those with dissociative identity disorder differ from people with other psychiatric problems.

Do I have to take part?

No. Participation is voluntary and it is up to you to decide whether or not to take part. You have been invited to participate as you have a diagnosis of either dissociative identity disorder or schizophrenia. If you decide to continue, you are free to withdraw at any time. If you would like to withdraw during the questionnaires please let the researcher know. If you would like to withdraw after the completion of the questionnaires, please contact Rachael Palmer

(rachael.palmer@pg.canterbury.ac.nz) or Martin Dorahy (martin.dorahy@pg.canterbury.ac.nz; +643 364 3416). Withdrawing your participation at any time is understood and respected and will not affect your therapy in any way.

What will happen to me if I take part?
Should you decide to take part you will complete several brief questionnaires which assess feelings, symptoms, and experiences you may or may not have.

How long will it take?
The study will take approximately 50-90 minutes to complete, and the majority of it will be conducted by Rachael Palmer (Masters of Science in Psychology postgraduate student). However, you will also briefly meet with either a registered psychiatric nurse (Lenaire Seager), a clinical psychologist (Associate Professor Martin Dorahy), or a psychiatrist (Professor Warwick Middleton) who will ask some questions about distressing events that may have occur during your life.

What do I have to do to take part?
If you would like to take part, please sign at the bottom of this form once you have read all the information and asked any questions that you have.

What are the possible disadvantages of taking part?
The questionnaires in this study ask questions about symptoms you may experience. One of the questionnaires asks about trauma that you may have experienced or are currently experiencing. Some people may find this distressing. If you are feeling any distress from this study, you will be able to talk to a mental health professional on request. In addition to this, a list of support and counselling services is provided below. Please also feel free to talk to your treating doctor or nurse.

Will my taking part in the study be kept confidential?
Yes. We will ask you some demographic information at the start but no identifying information will be used in the study. The data collected from these questionnaires will be entered into the computer without names. The only people who will have access to the data will be the experimenter (Rachael Palmer), and her supervisors (Martin Dorahy and Warwick Middleton).

Contact Details
If you have any further questions about the study please contact Martin Dorahy (Assoc Prof; University of Canterbury) on +64 3 364 3416 or martin.dorahy@canterbury.ac.nz. If you would like a summary copy of the results once the study is completed, please contact Martin Dorahy.

Name of researchers
Rachael Palmer (Masters student) and Assoc Prof Martin Dorahy (clinical psychologist). Department of Psychology, University of Canterbury, Private Bag 4800, Christchurch, 8140. Prof Warwick Middleton (psychiatrist), Lenaire Seager (Psychiatric Nurse). Belmont Private Hospital.

Contacts and Questions:

At this time you may ask any questions you may have regarding this study. If you have questions later, you may contact Martin Dorahy (University of Canterbury) on +643 364 3416 or martin.dorahy@canterbury.ac.nz

Support services

Lifeline: 13 11 14

Counselling services

Salvo Care Line: (07) 3831 9016

Emergency services

Psychiatric Emergency Centre (24hrs): (07) 3646 7256

Mental Health Emergency Response Line: (08) 9224 8888

Salvo Care Crisis Counselling: (07) 3831 9016

Appendix L

Participant Consent Form

College of Science

Department of Psychology
Tel: +64 3 364 2902, Fax: + 64 364 2181
Email: rachael.palmer@pg.canterbury.ac.nz

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

Consent form- Patient

"Symptoms in those with psychiatric illnesses."

I have read and understood the description of the above named project, and have had the opportunity to ask questions and have had these answered satisfactorily. On this basis, I agree to participate, with the understanding that confidentiality will be preserved.

I understand also that I may at any time withdraw from the project, including withdrawal of any information I have provided, without any negative consequence to myself.

I acknowledge that I am 18 years of age or older.

I consent to my data be merged with all the other data.

I note that the project has been reviewed and approved by the University of Canterbury Human Ethics Committee (Ref: 2013/40).

Full Name (please print): _____

Signature: _____

Signature of Researcher: _____

Date: _____

Appendix M

Debrief

College of Science

Department of Psychology
Tel: +64 3 364 2902, Fax: + 64 364 2181
Email: rachael.palmer@pg.canterbury.ac.nz

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

Debrief

Thank you for your participation in this study. If you are feeling any distress from this study, please let us know so we can arrange for you to talk to a mental health professional. In addition to this, a list of support and counselling services is provided below. Please also feel free to talk to your treating doctor or nurse.

We are conducting this study as we are interested in the similarities and differences in some of the symptoms that may be experienced by people with Dissociative Identity Disorder (DID) and Schizophrenia. Some of the overlapping symptoms can sometimes lead to misdiagnosis. We hope that the results of this study will highlight the differences between the two disorders enough that each disorder will be easier to recognise, therefore increasing the likelihood of correct detection of a person's problems. In addition to this, a greater understanding of the symptoms of these disorders may lead to more targeted interventions.

During your participation we asked you questions about distressing events that may have occurred during your life, as well as questions about a number of different symptoms you may experience. These symptoms include hallucinations, delusions, dissociation, depersonalisation and formal thought disorder. Previous research (e.g., Dorahy et al., 2009) has found links between distressing events and some of these symptoms such as auditory hallucinations/hearing voices. We hope to expand on this by exploring whether there are more links between distressing experiences and a number of symptoms. We would also like to see if there are differences in these symptoms between people with different disorders.

If you would like any more information on the study, or if you would like a summary copy of the results once they are completed, please contact Martin (martin.dorahy@canterbury.ac.nz, +643 364 3416) or Rachael (rachael.palmer@pg.canterbury.ac.nz).

Once again, we sincerely thank you for your participation. We hope that the findings from this study will ultimately help with the assessment and treatment of DID and Schizophrenia.

Support services

Lifeline: 13 11 14

Counselling services
Salvo Care Line (07) 3831 9016

Emergency services
Psychiatric Emergency Centre (24hrs): (07) 3646 7256
Mental Health Emergency Response Line (08) 9224 8888
Salvo Care Crisis Counselling (07) 3831 9016

Appendix N

Participant Thank You

College of Science

Department of Psychology
Tel: +64 3 364 2902, Fax: + 64 364 2181
Email: rachael.palmer@pg.canterbury.ac.nz

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

Dear _____

We would like to sincerely thank you for your participation in this study. This research may help contribute to the understanding of Dissociative Identity Disorder and Schizophrenia, and therefore your input is very appreciated and helpful. We hope that the results of this study will provide a better understanding of the differences in the two disorders, and that this may be relevant to diagnosis and treatment. Without willing volunteers like you, research like this would not be possible.

Please accept this $10 Westfield voucher as a small token of our gratitude to you.

Kind regards,

Assoc Prof Martin Dorahy, Rachael Palmer, Prof Warwick Middleton, and Lenaire Seager.

Appendix O

University of Canterbury Human Ethics Committee Approval

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

HUMAN ETHICS COMMITTEE

Secretary, Lynda Griffioen
Email: human-ethics@canterbury.ac.nz

Ref: HEC 2013/40

10 May 2013

Rachael Palmer
Department of Psychology
UNIVERSITY OF CANTERBURY

Dear Rachael

The Human Ethics Committee advises that your research proposal "Hallucinations, delusions and dissociation in those psychiatric illnesses" has been considered and approved.

Please note that this approval is subject to the incorporation of the amendments you have provided in your email of 10 May 2013.

Best wishes for your project.

Yours sincerely

Lindsey MacDonald
Chair
University of Canterbury Human Ethics Committee

Appendix P

Belmont Private Hospital Ethics Approval

Dear Sandy,
This is great news, many thanks. We will most certainly address these helpful comments and thank the committee for their time, energy and guidance.
See you soon

martin

From: Sacre, Sandy [Sandy.Sacre@healthecare.com.au]
Sent: Wednesday, June 19, 2013 7:59 PM
To: Martin Dorahy
Cc: Dr Warwick Middleton; WILLIAMS, Mary; McGURRIN, Patrick; MARTIN, Michael; Foster, Gaye; SEAGER, Lenaire
Subject: [SPAM: 21.600] Final measure for voices study

Dear Martin

The Research Committee met last week and discussed your application to conduct this research project at Belmont. The Committee's advice to the Hospital Executive is that this project should be allowed to proceed at Belmont as outlined in the proposal. The only 2 things we thought that the researchers should consider were:

1. Consider changing the title on the Patient Invitation letter, Patient Information leaflet and Patient Consent form to "Symptoms in those with psychiatric illnesses", as we thought this might:

1) be less off-putting to patients who may not identify with having hallucinations, delusions or dissociation; and

2) be less likely to hint at what specific symptoms the researchers are looking for, thus less likely to run the risk of patients trying to meet perceived expectations to express these symptoms.

2. Consider conducting the interviews at times of the day when consult rooms are not in high demand (e.g., early morning or late morning to the middle of the day).

The hospital Executive have given permission for you to proceed with the study.

Best of luck with it and I look forward to us welcoming you back to Belmont later in the year.

Sandy

Sandy Sacre
Senior Programs Manager, Belmont Therapy Programs
Belmont Private Hospital

Appendix Q

Canterbury Health and Disability Ethics Committee Approval

Health and Disability Ethics Committees

Health and Disability Ethics Committees
C/- MEDSAFE, Level 6, Deloitte House
10 Brandon Street
PO Box 5013
Wellington

0800 4 ETHICS
hdecs@moh.govt.nz

04 December 2013

Assoc Prof Martin Dorahy
Dept of Psychology
University of Canterbury
Ilam
Christchurch 8041

Dear Assoc Prof Dorahy

Re:	Ethics ref:	13/STH/135
	Study title:	Hallucinations, Delusions, and Dissociation in those with psychiatric illnesses.

I am pleased to advise that this application has been approved by the Southern Health and Disability Ethics Committee. This decision was made through the HDEC-Expedited Review pathway.

Conditions of HDEC approval

HDEC approval for this study is subject to the following conditions being met prior to the commencement of the study in New Zealand. It is your responsibility, and that of the study's sponsor, to ensure that these conditions are met. No further review by the Southern Health and Disability Ethics Committee is required.

Standard conditions:

1. Before the study commences at *any* locality in New Zealand, all relevant regulatory approvals must be obtained.
2. Before the study commences at a *given* locality in New Zealand, it must be authorised by that locality in Online Forms. Locality authorisation confirms that the locality is suitable for the safe and effective conduct of the study, and that local research governance issues have been addressed.

Non-standard conditions:

It states in both the information sheet and the Consent form that the study has been reviewed by the approved by the Canterbury Human Ethics Committee where it should state and the Southern HDEC as well.

Please submit Non-standard conditions to HDECS@moh.govt.nz for completeness. Do not submit Non-standard conditions as a Post Approval form.

After HDEC review

Please refer to the *Standard Operating Procedures for Health and Disability Ethics Committees* (available on www.ethics.health.govt.nz) for HDEC requirements relating to amendments and other post-approval processes.

Your next progress report is due by [1 year from approval date].

Participant access to ACC

The Southern Health and Disability Ethics Committee is satisfied that your study is not a clinical trial that is to be conducted principally for the benefit of the manufacturer or distributor of the medicine or item being trialled. Participants injured as a result of treatment received as part of your study may therefore be eligible for publicly-funded compensation through the Accident Compensation Corporation (ACC).

Please don't hesitate to contact the HDEC secretariat for further information. We wish you all the best for your study.

Yours sincerely,

Raewyn Idoine
Chairperson
Southern Health and Disability Ethics Committee

Encl: appendix A: documents submitted
appendix B: statement of compliance and list of members